National Energy Board | Office national de l'énergie

Reasons for Decision

TransCanada Keystone Pipeline GP Ltd.

OH-1-2007

September 2007

Application for Construction and Operation of the Keystone Pipeline

Canada

National Energy Board

Reasons for Decision

In the Matter of

TransCanada Keystone Pipeline GP Ltd.

Section 52 Application dated 12 December 2006 for the Keystone Pipeline Project

OH-1-2007

September 2007

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NewsRelease

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20 September 2007

NEB APPROVES KEYSTONE PIPELINE PROJECT

CALGARY —The National Energy Board has approved the TransCanada Keystone Pipeline GP Ltd. application to construct and operate the Canadian portion of the Keystone pipeline project which would transport 435,000 barrels per day of crude oil.

The Keystone pipeline project is a crude oil line that would run from Alberta to markets in Illinois. The Canadian portion of the line would extend from Hardisty, Alberta to a point near Haskett, Manitoba. The project involves the acquisition and conversion of 864 kilometres (km) of existing gas pipeline to an oil transmission pipeline. Approximately 371 km of new pipeline would be constructed as part of the project, as well as the construction and operation of pump stations, tanks and other related works and activities. The estimated cost of the project is $664 million.

In making its decision, the Board was presented with evidence from intervenors on many issues including impacts to Aboriginal peoples and the impact of the project on domestic interests. Both the Alberta Federation of Labour and the Communications, Energy and Paperworkers Union of Canada presented evidence that the project would have negative consequences for domestic industries, employment and security of supply. Through examination of the evidence, the Board found that the project's benefits outweighed its burdens.

"The Board concludes that approval of the Project is in the public interest and that the applied for facilities will be required for the present and future public convenience and necessity," said the Board in the Reasons for Decision.

The Board held a technical conference during the hearing to obtain further information on and understanding of engineering matters such as construction, change in service, pipeline operations and integrity management systems. One of the issues brought forward at the conference was the conversion of TransCanada's Mainline (Line 100-1) from natural gas to oil transmission. The line runs 864 km from Burstall, Saskatchewan to Carman, Manitoba. The Board was interested in ensuring the safe operation of the pipeline and therefore has set conditions specifically related to Line 100-1.

The NEB is an independent federal agency that regulates parts of Canada's energy industry. Its purpose is to promote safety and security, environmental protection, and efficient energy infrastructure and markets in the Canadian public interest, within the mandate set by Parliament in the regulation of pipelines, energy development and trade.

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This news release and the Reasons for Decision are available on the Board's website at www.neb-one.gc.ca under *What's New*!

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Office national de l'énergie National Energy Board

Communiqué

444, Septième Avenue S.-O., Calgary (Alberta) T2P 0X8

Pour diffusion à 14 h 30 (HAR)
Le 20 septembre 2007

L'ONÉ APPROUVE LE PROJET DE PIPELINE KEYSTONE

CALGARY — L'Office national de l'énergie a approuvé la demande de TransCanada Keystone Pipeline GP Ltd. visant la construction et l'exploitation de la portion canadienne du projet de pipeline Keystone, qui permettrait de transporter 435 000 barils de pétrole brut par jour.

Le projet consiste en un pipeline de pétrole brut qui relierait l'Alberta à des marchés de l'Illinois. La portion canadienne s'étendrait de Hardisty (Alberta) jusqu'aux environs de Haskett (Manitoba). Le projet comporte l'acquisition d'un gazoduc existant de 864 kilomètres (km) de long et sa conversion en un oléoduc. Une partie du pipeline, sur environ 371 km, serait entièrement nouvelle. Le projet nécessite en outre la construction et l'exploitation de stations de pompage, de réservoirs et d'autres ouvrages, ainsi que diverses activités connexes. Le coût du projet est estimé à 664 millions de dollars.

Avant de rendre sa décision, l'Office a étudié la preuve présentée par les intervenants sur de nombreuses questions, dont les incidences sur les peuples autochtones et l'impact du projet sur les intérêts de la population canadienne. L'Alberta Federation of Labour et le Syndicat canadien des communications, de l'énergie et du papier ont soutenu que le projet aurait des conséquences négatives sur les industries, l'emploi et la sûreté des approvisionnements au pays. L'Office a examiné la preuve et jugé que les avantages du projet l'emportaient sur ses fardeaux.

« L'Office en vient donc à la conclusion que l'approbation du projet est conforme à l'intérêt public et que les installations faisant l'objet de la demande sont d'utilité publique, tant pour le présent que pour le futur », a déclaré l'Office dans ses Motifs de décision.

L'Office a tenu une conférence technique au cours de l'audience pour obtenir des renseignements complémentaires sur les questions techniques et ainsi mieux comprendre divers aspects comme la construction, le changement de service, l'exploitation du pipeline et les systèmes de gestion de l'intégrité. Un des points soulevés à la conférence portait sur la conversion de la canalisation 100-1 du réseau principal de TransCanada pour qu'elle puisse transporter du pétrole plutôt que du gaz. La canalisation en question va de Burstall (Saskatchewan) à Carman (Manitoba), soit une distance de 864 km. L'Office tenait à ce que le pipeline soit exploité en toute sécurité et a donc imposé des conditions portant sur la canalisation.

L'Office national de l'énergie est un organisme fédéral indépendant qui réglemente certains aspects de l'industrie énergétique canadienne. Sa raison d'être est de promouvoir, dans l'intérêt public canadien, la sûreté et la sécurité, la protection de l'environnement et l'efficience de l'infrastructure et des marchés énergétiques, en s'en tenant au mandat conféré par le Parlement

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au chapitre de la réglementation des pipelines, de la mise en valeur des ressources énergétiques et du commerce de l'énergie.

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Il est possible de consulter ce communiqué ainsi que les Motifs de décision sur le site Web de l'Office, à l'adresse www.one-neb.gc.ca, sous la rubrique « Quoi de neuf? »

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Glossary of Terms and Abbreviations

AB	Alberta
AFL	Alberta Federation of Labour
bbl(s)	barrel(s)
b/d	barrels per day
Board or NEB	National Energy Board
CAPP	Canadian Association of Petroleum Producers
CEA Act	*Canadian Environmental Assessment Act*
CEP	Communications, Energy & Paperworkers Union of Canada
CPPL	ConocoPhillips Pipe Line Company
CSA	Canadian Standards Association
cSt	centistoke
Carry the Kettle	Carry the Kettle First Nation
ConocoPhillips	ConocoPhillips Canada Limited
DFO	Fisheries and Oceans Canada
Dakota Nations of Manitoba	Birdtail Sioux First Nation, Canupawakpa Dakota First Nation, Dakota Plains First Nation, Dakota Tipi First Nation, Sioux Valley Dakota Nation
EA	environmental assessment
EPP	environmental protection plan
ESR	environmental screening report
Enbridge	Enbridge Pipelines Inc.
FA(s)	Federal Authority(ies)
Federal Coordination Regulations	*Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements*
GHG	greenhouse gas
HDD	horizontal directional drill

ILI	in-line inspection
kg/m^3	kilograms per cubic metre
KLG	Kessler Landowners Group
km	kilometre(s)
kp	kilometre post
KSG	Keystone Shippers Group (ConocoPhillips Canada Limited & Suncor Energy Marketing Inc.)
kW	kilowatt
Keystone	TransCanada Keystone Pipeline GP Ltd.
Line 100-1	One of the TransCanada PipeLines Limited lines between Burstall, Saskatchewan and Carman, Manitoba
m^3	cubic metre(s)
m^3/d	cubic metres per day
MB	Manitoba
mm	millimetre(s)
MOG	*Memorandum of Guidance on the Regulation of Group 2 Companies*
MOP	maximum operating pressure
MOU	Memorandum of Understanding
NAFTA	*North American Free Trade Agreement*
NEB Act or the Act	*National Energy Board Act*
NPS	nominal pipe size (in inches)
nominal capacity	The long-term sustainable capacity of the pipeline. For the Keystone pipeline, this is expected to be 90 percent of the design capacity
OCC	Operations Control Centre
OPR-99	*Onshore Pipeline Regulations, 1999*
OPUAR	*Oil Pipeline Uniform Accounting Regulations*
PADD	Petroleum Administration for Defense District. Regions defined by the Energy Information Administration, U.S.

	Department of Energy that describes a market area for crude oil in the U.S.
PADD II	Region also known as the U.S. Midwest and includes the following states: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Ohio, Oklahoma, Tennessee and Wisconsin
PIP	Preliminary Information Package
psi	pounds per square inch
Project	Keystone Pipeline Project
Purvin & Gertz	Purvin & Gertz, Inc.
RA or RAs	Responsible Authorities
RoW	right-of-way
RPP	refined petroleum products
SCADA	Supervisory Control and Data Acquisition
SCO	synthetic crude oil
SEMI	Suncor Energy Marketing Inc.
SK	Saskatchewan
Standing Buffalo	Standing Buffalo Dakota First Nation
Suncor	Suncor Energy Inc.
synbit	a heavy blend in which synthetic crude oil is mixed with bitumen to reduce its viscosity for pipeline transportation purposes
TOP or TOPs	TransCanada Operating Procedure(s)
TSA or TSAs	Transportation Service Agreement(s)
TMPL	Trans Mountain Pipeline system
TransCanada	TransCanada PipeLines Limited
Treaty 4	Treaty 4 First Nations
U.S.	United States of America
WCSB	Western Canada Sedimentary Basin
$Cdn	Canadian dollars

Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* (NEB Act or the Act) and the Regulations made thereunder; and

IN THE MATTER OF an application dated 12 December 2006 by TransCanada Keystone Pipeline GP Ltd. (Keystone) for an authorization to construct and operate the Canadian portion of a crude oil pipeline extending from Hardisty, Alberta to a point near Haskett, Manitoba; and

IN THE MATTER OF Hearing Order OH-1-2007;

HEARD in Calgary, Alberta on 4, 5, 6, 7, 8, 20 and 21 June 2007; and in Regina, Saskatchewan on 13 and 14 June 2007.

BEFORE:

G. Caron	Presiding Member
G. Habib	Member
S. Crowfoot	Member

Appearances	**Participants**	**Witnesses**
C. K. Yates, Q.C. W.M. Moreland J. Herbert	TransCanada Keystone Pipeline GP Ltd.	J.A.M. Hunt R.E. Jones R. Kendel D. King P. Kocis A.T. Lees P.E. Miller A. Purves M.J. Schmaltz G.R. Simmonds B. Thomas T.H. Wise
N.J. Schultz	Canadian Association of Petroleum Producers	
B. Troicuk	BP Canada Energy Company	
E.W. Dixon	Enbridge Pipelines Inc.	
G. Nettleton R. Rodier	Keystone Shippers Group (ConocoPhillips Canada Limited & Suncor Energy Marketing Inc.)	
R. Kolber	Petro-Canada	
L. Chahley	Alberta Federation of Labour	G. McGowan T. Pearson

S. Shrybman	Communications, Energy & Paperworkers Union of Canada	D.H. Coles M.C. McCracken
P. Ryzuk	Kessler Landowners Group	
D. Gibson	The Parkland Institute	D. Gibson
M.C. Phillips Z. Charowsky	Standing Buffalo Dakota First Nation	Chief R. Redman Elder W. Goodwill Elder C. Tawiyala Elder D. Thorne
L. C. Bell J. A. Fisk	Board Counsel	

Arguments

Alberta Federation of Labour

Canadian Association of Petroleum Producers

Communications, Energy & Paperworkers Union of Canada

Dakota Nations of Manitoba (Birdtail Sioux First Nation, Canupawakpa Dakota First Nation, Dakota Plains First Nation, Dakota Tipi First Nation, Sioux Valley Dakota Nation)

Kessler Landowners Group

Keystone Shippers Group

Standing Buffalo Dakota First Nation

TransCanada Keystone Pipeline GP Ltd.

Chapter 1

Introduction

1.1 Background

On 12 December 2006, TransCanada Keystone Pipeline GP Ltd. (Keystone) applied to the National Energy Board (the Board or NEB) for approvals related to the proposed Keystone Pipeline Project (the Project). Specifically, Keystone requested:

(a) a Certificate of Public Convenience and Necessity under section 52 of the *National Energy Board Act* (the Act) authorizing Keystone to construct and operate the Keystone Pipeline;

(b) approval for a change in service of Line 100-1 from natural gas to crude oil service, pursuant to section 43 of the *Onshore Pipeline Regulations, 1999*; and

(c) an Order under Part IV of the Act for approval of the proposed toll methodology and tariff for the Keystone Pipeline.

The Project consists of a 1,235 km pipeline which would extend from Hardisty, Alberta to a location near Haskett, Manitoba at the border between Canada and the U.S. (Figure 1-1). The Project involves the construction of two new pipeline segments and the conversion of one segment of the TransCanada PipeLines Limited (TransCanada) Mainline Line 100-1 from Burstall, Saskatchewan to Carman, Manitoba.

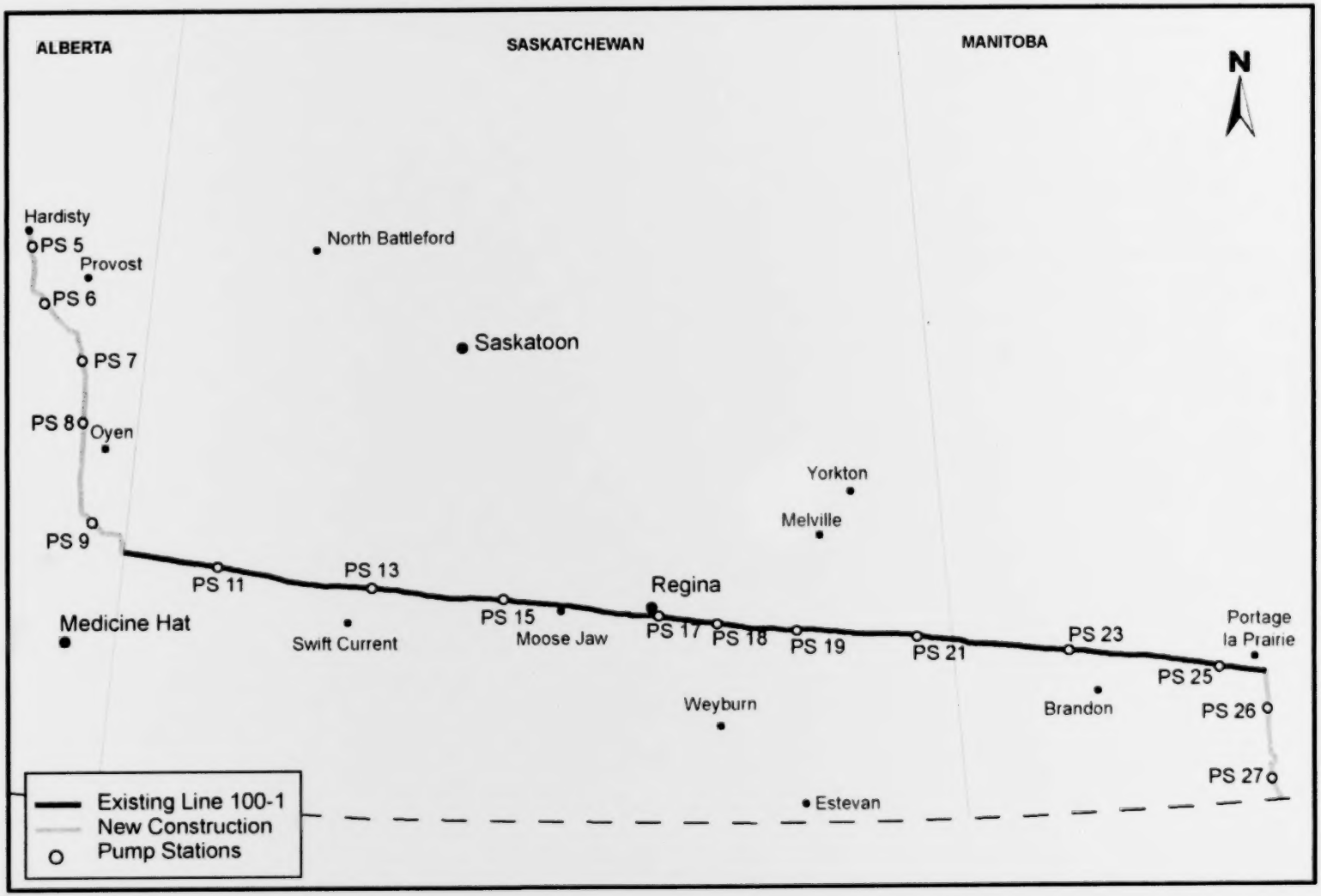
Keystone submitted that the Project would have an initial nominal capacity of approximately 69 200 m^3/d (435,000 b/d). The nominal capacity could be expanded to 94 000 m^3/d (591,000 b/d) with the addition of pumping facilities.

Since the Project requires a Certificate of Public Convenience and Necessity under section 52 of the NEB Act, it triggers the requirement for an environmental assessment under the *Canadian Environmental Assessment Act* (CEA Act). Based on a project description filed by Keystone on 10 July 2006, the Board and other Responsible Authorities (RAs) each determined that the Project would be subject to a screening level assessment under the CEA Act. Since the Project does not require more than 75 km of new right-of-way (RoW), a comprehensive study under the CEA Act was not required.

1.2 Regulatory Context

Keystone filed a Preliminary Information Package (PIP) respecting the proposed Project on 10 July 2006. The purpose of the PIP was to initiate and facilitate an efficient regulatory review of the Project and enable the Board and other federal departments to determine their environmental assessment responsibilities and the scope of the assessment under the CEA Act.

Figure 1-1
Keystone Pipeline Project - Canadian Section



On 12 December 2006, Keystone filed an application with the Board for approvals to construct and operate the Canadian portion of the Keystone pipeline. Keystone intended to commence construction in early 2008 to ensure the Project would be in service by late 2009.

The Board issued a letter on 29 January 2007 announcing it had decided to convene an oral public hearing beginning Monday 4 June 2007. The Hearing Order, setting out the procedures to be followed in the hearing, was included. The Board invited any person wanting to intervene in the proceedings to apply by 23 February 2007. The Board received and approved 33 applications for intervenor status.

In its 29 January 2007 letter, the Board invited parties to suggest any amendments or additions to the List of Issues by 23 February 2007. The Board received comments from the Alberta Federation of Labour (AFL), the Communications, Energy & Paperworkers Union of Canada (CEP), The Parkland Institute (Parkland), Dr. Gordon Laxer, and Birdtail Sioux First Nation, Canupawakpa Dakota First Nation, Dakota Plains First Nation, Dakota Tipi First Nation and Sioux Valley Dakota Nation (collectively known as the Dakota Nations of Manitoba). On 27 February 2007, the Board received reply comments from Keystone. The concerns raised by parties related to greenhouse gas (GHG) emissions, value-added processing, energy security and issues related to the Dakota traditional territory.

The Board responded to parties on 2 March 2007. The Board concluded that no amendments or additions to the List of Issues were required as the List of Issues covered all matters raised by parties to the extent they were relevant to the determination the Board had to make.

On 19 April 2007, the Board announced the location of the hearing. In that letter, the Board noted that it considered a number of factors when determining the location of the oral public hearing, including the location of the Project and the interest of intervenors located in Alberta, Saskatchewan and Manitoba. Based on these factors, the Board decided to hold the hearing in Calgary, Alberta and Regina, Saskatchewan.

The Board offered to host an information session for the Dakota Nations of Manitoba and other parties to the proceeding on 2 March and 13 March 2007, respectively. The purpose of the information sessions was to offer parties unfamiliar with Board processes information about how the Board examines applications for pipelines and associated facilities and how parties can participate in these processes. The information sessions would also provide an opportunity for parties to ask questions of Board staff. No party expressed an interest in such an information session.

On 1 June 2007, the Board announced it had decided to hold a Technical Conference on Engineering matters. The Technical Conference was held in Calgary on 18 June 2007. All parties were invited to attend and the Board Panel was in attendance. The purpose of the Technical Conference was to obtain further information about engineering matters in a more informal setting in order to gain an improved understanding of complex matters and use hearing time more effectively. At the Technical Conference, the Board questioned Keystone primarily on engineering construction, change of service, pipeline operations and integrity management systems.

The Board used a life cycle approach in considering the Keystone Project. This means that all issues and concerns before the Board were considered in the context of the entire Keystone Project life cycle (i.e., design, planning, construction, operation, decommissioning and abandonment), if approved. The Board also considered its various regulatory roles, such as application assessment and post-decision condition compliance, at each stage in the project life cycle to determine where it could best provide oversight.

The Board considered all the information in the application and subsequent submissions and ensured there was adequate information on the public record to make its decision as to whether to approve the Project. The Board focused its assessment effort on those issues and concerns that were considered critical to the Board's decision rather than on implementation details. For example, when the company provided a commitment to achieve reasonable goals or objectives, or implement standard mitigation, the Board determined this was sufficient for the application assessment. However, where the Board was in doubt, where non-standard mitigation was proposed or where there was perceived risk, the Board did explore in more detail the specific design, construction and operational aspects during the assessment stage of the life cycle approach.

If the Project is approved, the specific implementation details would be considered by the Board following the issuance of a certificate of public convenience and necessity. Some of the post-decision regulatory tools the Board would use include: post-decision meetings with Keystone to review commitments and to discuss specific construction and operational methods; on-site inspections during construction and operation to verify compliance to certificate conditions and relevant legislation and standards; and audits to evaluate Keystone's management systems.

The life cycle approach supports the NEB's goal-oriented direction, allows for more focused Board decisions, and places the regulatory focus on the appropriate stage of the regulatory process. The anticipated outcome is a more efficient and effective regulatory process for all stakeholders.

As a responsible authority under the CEA Act, the Board completed an environmental screening report pursuant to the CEA Act and the Board's regulatory process. The report is provided as an appendix to these Reasons. Further discussion of environmental matters can be found in Chapter 8 Environment and Socio-Economic Matters.

1.3 Motions

On 15 May 2007, the CEP, Parkland, the AFL and Dr. Laxer filed a Notice of Motion for orders to adjourn the hearing to allow for the assembly of information relating to the impact of the Project on the development or viability of Canadian refining and petrochemical industries and to authorize one or more Board Members, under section 15 of the NEB Act, to make a report to the Board on certain matters. The Motion submitted that it was unreasonable to expect intervenors to provide further evidence on these matters given the limited access to proprietary information, including information in Keystone's possession, and in light of the fact that they lack the necessary resources and expertise. The Board denied the request to adjourn the hearing noting that the Board will make its decision based on the evidentiary record before it and determined

that the proceeding pursuant to the Hearing Order was the most appropriate, efficient and effective forum to hear the relevant evidence. See full ruling in Appendix II.

The AFL and the CEP filed a Notice of Motion on 28 May 2007 requesting subpoenas to be issued to representatives of the Keystone Shippers Group (KSG) and for an order requiring Keystone to disclose the identity of the committed shippers and the nature and quantities of the oil goods to which the contracts pertain. In its 1 June 2007 letter, the Board advised it would hear from parties orally on this motion as a preliminary matter on the first day of the hearing. On 4 June 2007, parties provided their views and the Board communicated its decision orally on 5 June 2007. The Board denied the subpoena request of the AFL and the CEP. The Board stated that there was already information on the public record with respect to supply, markets and products to be transported by the Keystone pipeline. To the extent that the information requested had not already been provided or was not as detailed as requested, the Board found that it was unnecessary in order for the Board to satisfy its mandate. The Board also denied the request of the AFL and the CEP for Keystone to provide information related to committed shipments. For the reasons provided earlier, the Board was of the view that this evidence would not assist it with the determination it was being called upon to make. See full ruling in Appendix III.

After the conclusion of the hearing and the filing of Keystone's Reply Argument, the CEP filed a motion dated 29 June 2007 to file sur-reply and included the sur-reply. The CEP's motion alleged that Keystone's reply argument misrepresented the CEP's evidence and submissions, introduced errors to the record and claimed the CEP fabricated evidence in its argument. The CEP submitted that sur-reply should be permitted to allow it to address these errors. The Board also received a letter dated 3 July 2007 from the AFL supporting the CEP's motion. In its letter of decision dated 5 July 2007, the Board explained that leave to file sur-reply should be granted rarely and only in circumstances where an applicant has raised a new issue in reply which an intervenor has not had an opportunity to address. The Board was not persuaded that Keystone's reply argument raised any new issue to which the CEP must, as a matter of fairness, be permitted to respond. Further, the Board noted that it would draw its own conclusion as to whether the submissions and evidence had been properly characterized by counsel. Therefore, the Board denied the CEP motion and did not consider the sur-reply in its deliberations. See full ruling in Appendix IV.

Chapter 2

Economic Feasibility

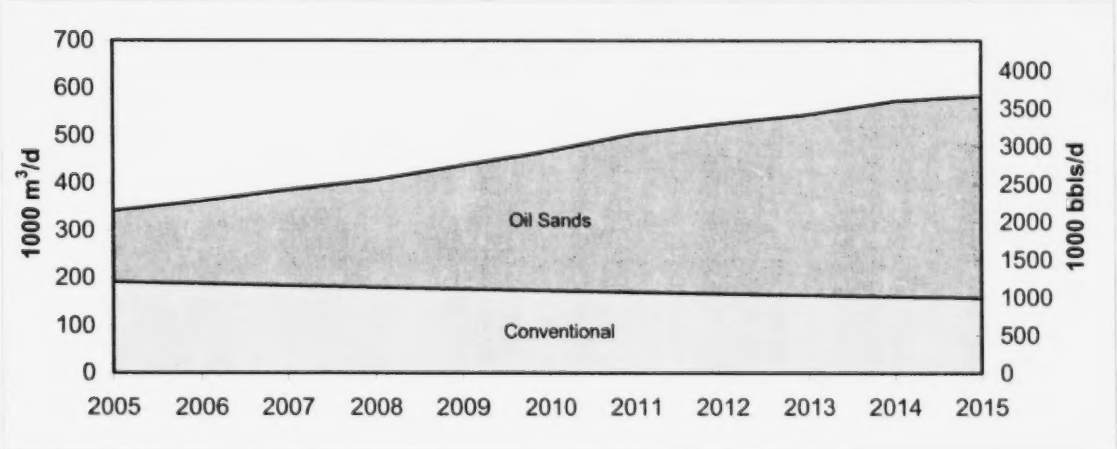
In making its determination on the justification for and economic feasibility of a proposed pipeline project, the Board assesses whether the facilities are needed and would be used at a reasonable level over their expected economic life. In order to make this determination, the Board considers the evidence submitted on the supply of commodities that will be available to be shipped on the pipeline, the availability of adequate markets to receive products delivered by the pipeline and the adequacy of existing pipeline capacity. As well, the Board considers evidence related to financing the construction and ongoing operations of the proposed pipeline.

2.1 Crude Oil Supply

In support of its application, Keystone submitted evidence on crude oil supply in western Canada in the form of a report prepared by Purvin & Gertz, Inc. (Purvin & Gertz) entitled "Supply and Markets Outlook for the Keystone Pipeline Project". The report also discussed the facilities available in Hardisty, Alberta that would enable this supply to access the Keystone pipeline.

The Purvin & Gertz report forecast that total crude oil production in the Western Canada Sedimentary Basin (WCSB) will increase from 342 000 m^3/d (2,152,000 b/d) in 2005 to 468 000 m^3/d (2,944,000 b/d) by 2010 and to 583 200 m^3/d (3,699,000 b/d) by 2015 (Figure 2-1). It stated that this increase is the result of growth in Alberta oil sands production which will more than offset the decline in conventional oil production. The report noted that forecasts by others showed similar trends in both conventional and oil sands production.

Figure 2-1
Western Canada Crude Oil Production



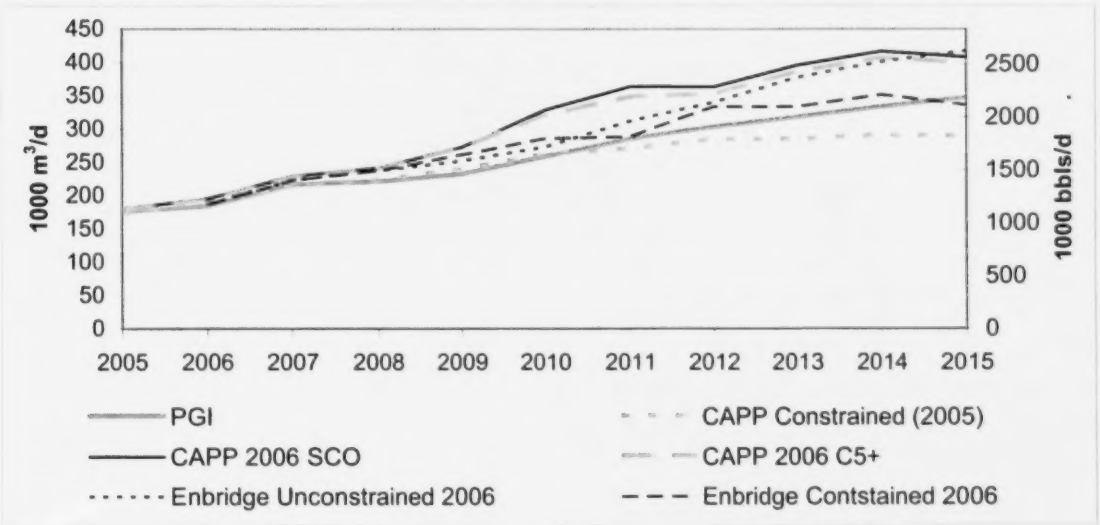
ConocoPhillips Canada Limited (ConocoPhillips) and Suncor Energy Marketing Inc. (SEMI), the two disclosed committed shippers on the Keystone pipeline, have each made significant investments aimed at expanding their oil sands production.

Purvin & Gertz noted that crude oil supply available for transportation by pipeline to the market differs from crude oil production due to yield losses when heavy crude oil and bitumen are upgraded and due to increases when imported diluent is purchased to facilitate pipeline transportation of heavy crude oil and bitumen. Taking these adjustments into consideration, it estimated that total crude oil supply in western Canada available to the market will increase by 36 percent in 2010 and 74 percent in 2015 compared to 2005 supply levels.

Purvin & Gertz submitted that there are different views on the types of crude oil blends that will be available to ship by pipeline to the markets depending on the assumptions made about diluent source. It compared its own heavy and light crude oil supply forecasts to forecasts prepared by the Canadian Association of Petroleum Producers (CAPP) and Enbridge Pipelines Inc. (Enbridge).

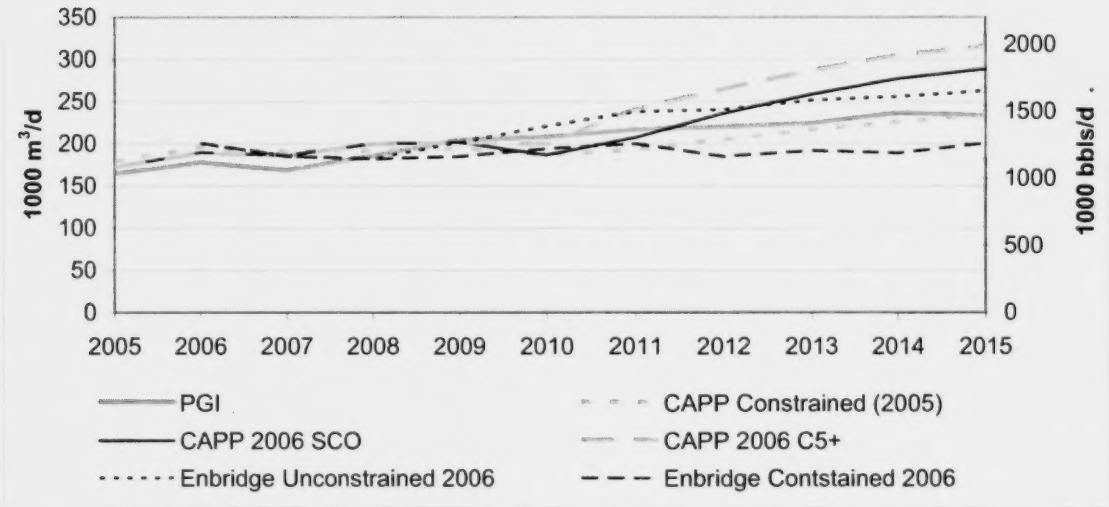
With regard to heavy crude oil supply the report noted that, while there was some variability, all the forecasts projected steady increases to 2015 (Figure 2-2).

Figure 2-2
Comparison of Western Canada Heavy Crude Oil Supply Forecasts



Light crude oil supply forecasts in the Purvin & Gertz report varied from remaining relatively flat near 2005 levels to the end of the forecast period to rising during the same timeframe. Purvin & Gertz submitted that the differences in the forecasts were largely related to assumptions regarding whether synthetic oil or imported condensate would be used for diluent to transport heavy crude. In comparing its forecast with others, Purvin & Gertz noted that its outlook was on the high end of the range compared to those completed in 2005, but was less than CAPP's 2006 forecast, especially after 2013 (Figure 2-3).

Figure 2-3
Comparison of Western Canada Light Crude Oil Supply Forecasts



The Purvin & Gertz oil supply forecast submitted by Keystone was not contested by parties.

In addition to discussing projected increased supplies of crude oil, Keystone provided evidence regarding the access to upstream supplies. Keystone noted there is over 1 500 000 m^3 (9,500,000 bbls) of storage available at Hardisty, Alberta which is connected to pipelines from Edmonton, Cold Lake, Lloydminster and Fort McMurray, Alberta. It submitted that inbound pipeline capacity, which totals approximately 441 500 m^3/d (2,777,000 b/d), is further supplemented by rail and truck transport. Figure 2-4 illustrates the hub nature of the Hardisty area, which is the receipt point for crude oil supply delivered into the Keystone pipeline.

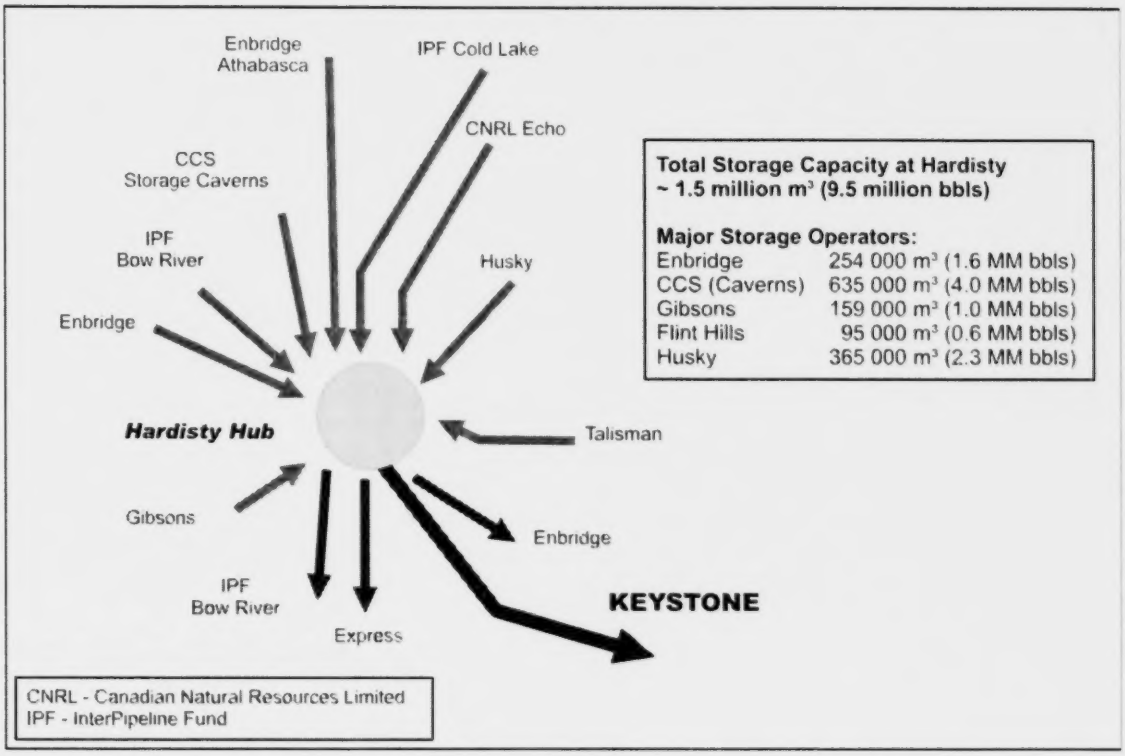
Keystone submitted that parties who have executed Keystone's long-term transportation service agreements, as well as other potential WCSB crude oil producers, have access to the Hardisty hub, thus facilitating the Keystone pipeline's ability to access diversified supplies. Based on these commitments and the Purvin & Gertz analysis, Keystone concluded that there is ample and uncontroverted evidence as to the availability of crude oil to the proposed Keystone pipeline.

2.2 Transportation

WCSB Export Pipeline Capacity

The Purvin & Gertz report described seven pipeline systems that currently export crude oil from western Canada: TransMountain Pipeline (TMPL), Enbridge, Express, Rangeland, Bow River, Wascana and Enbridge's Westspur Pipeline system. Table 2-1 shows existing pipeline capacity to transport crude oil as per the Purvin & Gertz report.

Figure 2-4
Hardisty Infrastructure



Despite some expansions to current capacity, Purvin & Gertz forecast that these existing systems will not have sufficient capacity to support the forecast production and subsequent exports beyond 2009. Without additional pipeline capacity to export crude oil from western Canada, the transportation shortfall could reach 53 000 m^3/d (339,000 b/d) by 2011 and 136 000 m^3/d (860,000 b/d) by 2016. Purvin & Gertz further noted that the expected impact of insufficient pipeline capacity for Canadian crude would be price discounting, shipping crude oil to less desirable markets, shut-in of crude oil and possibly delaying investments in announced but uncommitted oil sands projects.

While none of the parties directly questioned the need for additional pipeline capacity out of the WCSB, the CEP noted that there are other pipeline applications before the Board that are related to common sources of supply or common markets that are pending. It argued that considering the Project in isolation from other related proposals did not accord with the Board's public interest mandate. Accordingly, and in support of its submission that the Board should undertake a more comprehensive review of the Project before it, the CEP encouraged the Board to consider other related proposals that are imminent or already in the regulatory process in order to determine which pipeline proposals would best align with Canadian policy objectives.

Table 2-1
Existing Crude Oil Export Pipeline Capacity as Calculated by Purvin & Gertz

Pipeline system	Crude Oil Capacity		Estimated Breakdown of TOTAL Pipeline Capacity by Product Type
	m^3/d	b/d	
TMPL	20 700 (i)	130,000 (i)	Light (38%), heavy (31%), RPP (31%)
Enbridge	281 700	1,772,300	Light (32%), heavy (60%), RPP (8%)
Express/Platte	45 000 (ii)	283,000 (ii)	Light (33% by 2010) and heavy (67% by 2010)
Rangeland	10 300	65,000	Light (77%) and heavy (23%)
Milk River	18 800	118,000	Light (4%) and heavy (96%)
Wascana	n/a (iii)	n/a (iii)	Light (100%)
Enbridge Westspur	1 000 (iv)	6,000 (iv)	Light (12%), heavy (0%)
Total	***377 500***	***2,374,300***	

(i) The crude oil capacity on TMPL includes the 5 600 m^3/d (35,000 b/d) expansion in early 2007. This was derived by taking the total capacity of the pipeline of 41 300 m^3/d (260,000 b/d), which is the capacity of the pipeline assuming that 31 percent of the total capacity transports heavy crude oil, and then subtracting 7 900 m^3/d (50,000 b/d) to account for the capacity used for Canadian domestic crude oil deliveries. An additional 12 700 m^3/d (80,000 b/d) is subtracted to account for the portion of the pipeline's capacity used for the delivery of refined petroleum products (RPP). Note that a subsequent expansion of 6 400 m^3/d (40,000 b/d) to the pipeline is estimated to be available by mid 2008.

(ii) The 45 000 m^3/d (283,000 b/d) capacity on the Express pipeline is currently not fully utilized because it is limited by the capacity available on the connecting Platte Pipeline. Purvin & Gertz assumed that due to indigenous crude oil production declines in the U.S. Rockies and rising refinery demand, Express and/or other pipelines to the U.S. Rockies will be able to increase their use of their combined export capacity by 3 200 m^3/d (20,000 b/d) each year from 2007 to 2009.

(iii) The Wascana pipeline has a capacity of 6 400 m^3/d (40,000 b/d) but has not been operating in recent years hence, its capacity to export light crude is not included in the analysis.

(iv) Enbridge's Westspur pipeline system connects at the U.S. border to the Enbridge North Dakota line, with an export capacity of around 7 900 m^3/d (50,000 b/d). However, due to portion of capacity used to transport U.S. domestic crude oil volumes, only 12 percent of the capacity or 1 000 m^3/d (6,000 b/d) was estimated to be available for transporting Canadian crude oil.

In response to the CEP's argument, Keystone submitted that information about other pipelines is not required or relevant in assessing the merits of the Keystone pipeline. Further, it indicated that the Keystone application is not deficient as it supplied all the information stipulated in the Board's Filing Manual and scoping decision.

Keystone Pipeline Capacity

Keystone stated the Project could increase the available transportation capacity for western Canadian oil producers by 69 200 m^3/d (435,000 b/d), the nominal capacity of the pipeline, by 2009. Keystone also noted that this capacity could be expandable to 94 000 m^3/d (591,000 b/d) through the addition of pumping facilities.

Keystone noted that, as set out in its Keystone Pipeline System Petroleum Tariff (Tariff), the pipeline would be able to transport crude oil ranging from blended heavy to light synthetic crude oil. The range of crude oil types that could be transported by the pipeline are shown in Table 2-2.

Table 2-2
Properties of Crude Oil Transported by the Keystone Pipeline

Product	Standard Density	Reference Temperature		Viscosity	
				13.5°C	18.5°C
	kg/m³	°C	°F	cSt	cSt
Heavy Blend	940	7.5 18.5	45.5 65.3	227 523	164 350
Synthetic Crude	865	not available	not available	8	12

In addition to increasing export capacity for a wide range of crude oil products, Keystone submitted that the pipeline's "bullet" design from Hardisty, Alberta to Wood River, Illinois would better protect batch integrity and thus provide better delivered product quality compared to competitor pipelines. The bullet design would also eliminate the need for break-out tankage and reduce transit times.

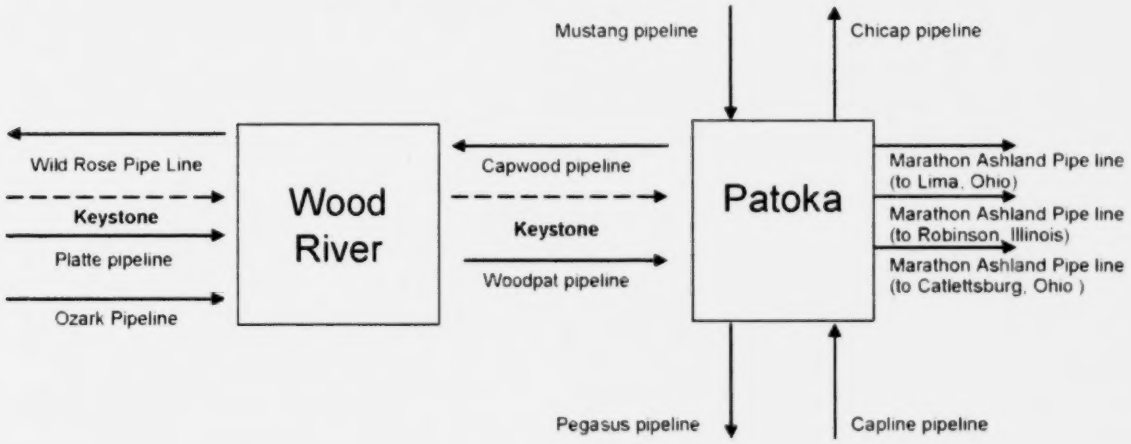
2.3 Market for Western Canadian Crude Oil

According to the Purvin & Gertz report, in 2005, the eight refineries in Western Canada used approximately 92 800 m^3/d (584,000 b/d) of crude oil, which represents almost 97 percent of their total estimated capacity of 96 100 m^3/d (605,000 b/d). Since 2000, annual crude oil demand growth from these refineries has been 1.4 percent per year. Purvin & Gertz forecast that demand would increase by 1.5 percent per year and therefore it expects demand to rise by only 7 100 m^3/d (45,000 b/d) by 2010. Purvin & Gertz also noted that heavy crude oil use at the Western Canadian refineries was not expected to grow significantly; therefore, heavy crude oil exports are forecast to rise.

Keystone Target Market

Keystone stated in its application that the target markets for the Project are refineries in southern PADD II. PADD II refineries have access to crude oil from Illinois, either at Wood River or Patoka. These points form a market hub as illustrated in Figure 2-5. Of particular note was that both the ConocoPhillips refinery at Wood River, with a capacity of 48 600 m^3/d (306,000 b/d) and Marathon Ashland Petroleum LLC's refinery at Robinson, Illinois, with a capacity of 30 500 m^3/d (192,000 b/d), could receive crude oil from the Keystone pipeline.

Figure 2-5
Wood River and Patoka Infrastructure



In addition, Keystone stated that both refineries were planning expansions or modifications to enable processing of additional Canadian crude oil. ConocoPhillips plans to add coking capacity to process about 30 200 m^3/d (190,000 b/d) of heavy crude oil and expand its refinery by between 4 800 to 7 300 m^3/d (30,000 to 46,000 b/d), while Marathon is examining a 23 800 m^3/d (150,000 b/d) modification to enable processing of heavy crude oil.

Keystone submitted that the region potentially served by the Keystone pipeline via the Patoka hub includes three other refineries in Ohio and Kentucky that have a combined refining capacity of 71 400 m^3/d (449,000 b/d).

Purvin & Gertz forecast that demand in PADD II would grow and that increasing supplies of Canadian crude oil could handle this growth in addition to offsetting declining U.S. domestic production.

Keystone stated that it had obtained binding transportation contracts that underpinned the Project. The contracts total 54 100 m^3/d (340,000 b/d), which represents 78 percent of the pipeline's nominal capacity and have an average term of 18 years. However, it noted that specific contract details could not be disclosed as the information would be commercially sensitive to the shipper, Keystone, or both. Keystone submitted that the existence of firm transportation contracts is evidence that there is market support for the Project and that the terms of the negotiated commercial arrangements are reasonable and competitive.

The CEP and the AFL expressed concerns regarding the lack of information provided on the products that would be transported by the pipeline. The CEP submitted that without details on the specific products and proposed volumes that would be transported, it would be impossible for the Board to assess the adequacy of the markets for the oil products exported though the Keystone pipeline because the Board could not determine whether the specifications of the exported oil matched the type of oil that the refineries in the target market were equipped to process. The CEP also submitted that Keystone's analysis of markets concentrated on developments in the U.S. and did not include an equivalent analysis of planned and expanded

facilities for processing bitumen or heavy blends in Canada. The CEP argued that there was insufficient evidence for the Board to assess the adequacy of the markets served by the Keystone pipeline to absorb the type of oil products that are likely to be produced in Alberta for export markets.

The Keystone Shippers Group (KSG) supported the proposed transportation arrangements on the Keystone pipeline. It noted that it is presently not known what shippers on the Keystone pipeline will ship and that the pipeline has the ability to move a range of products, including up to 100 percent upgraded product if that was what the shippers and market desired. It argued that such flexibility is key to be able to respond effectively to market demand and price signals.

2.4 Ability to Finance

In its application Keystone submitted that it will obtain the funds required for the construction of the Project from its parent company, TransCanada. By using a combination of internally-generated cash flow and funds obtained from Canadian and U.S. capital markets, TransCanada will be able to fully finance the capital expenditures required to construct and place the Project in service. Keystone further advised that it has signed contracts with negotiated tolls for 78 percent of the capacity of the pipeline for an average of 18 years. Keystone also stated that the negotiated tolls were comprised of a combination of fixed and variable tolls. The fixed component of the toll is to recover capital invested and the variable portion of the toll is a flow-through of actual operating costs, adjusted on an annual basis.

No concerns were raised and no parties sought to examine Keystone on either the proposed financing or the Company's ability to recover the capital, operating expenses or financing costs of the applied-for facilities.

Views of the Board

The Board finds the assessment of crude oil production and supply, transportation infrastructure and markets for western Canada crude oil submitted by Keystone, to be reasonable. Having reviewed the evidence, the Board is satisfied that there will be sufficient crude oil supply and markets to support the construction and long-term operation of the Keystone pipeline. The Board is of the view that there is a need for additional crude oil transportation capacity out of the WCSB to ship the growing oil sands production to the markets in the U.S. identified by Keystone.

The Board accepts that Keystone's parent company, TransCanada, has the ability to finance the construction of the Project and place it into operation. Furthermore, the Board recognizes that Keystone has signed contracts for 78 percent of the pipeline's capacity for an average term of 18 years, with the negotiated tolls designed to recover both capital and operating costs. The volumes likely to be transported for uncommitted shippers, to be tolled at a maximum of 120 percent of the five year negotiated toll, will also contribute to the recovery of costs. Overall, the

Board is satisfied that adequate provisions exist for the recovery of capital, operating expenses and financing costs for the applied-for facilities.

In assessing these matters, the Board has also considered the concerns expressed by some intervenors regarding the unspecified composition of the product that will be transported by the Keystone pipeline. In the Board's view, this information is unnecessary to assess whether the Keystone pipeline will be used at a reasonable level over its economic life. Furthermore, the Board is of the view that oil markets will continue to be in constant evolution. These markets would be better served by a pipeline capable of effectively handling a range of products, which Keystone is designed to be. The Board notes there is demonstrated strong shipper support for the Project in the form of long-term contracts for a significant proportion of the pipeline's capacity and that no intervenor challenged Keystone's evidence on supply, transportation and markets. The Board is satisfied that if approved, the applied-for facilities will be used at a reasonable level and that the associated tolls, will be paid.

It was suggested by the CEP in final argument that the Board should consider the public interest broadly enough to review this application in comparison or conjunction with other proposed projects. The Board does not however have a practice of hearing facilities applications on a comparative basis and has, in the case of *Sable*[1], determined that it is not under a statutory obligation to hold comparative hearings. In the Board's view, it has an obligation to hear all views in order to determine whether the Project is in the "present and future public convenience and necessity". The Board finds that the circumstances of this case do not warrant a comparative hearing. The Board is therefore of the view that it would be inappropriate to delay its decision on this application.

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1 Joint Public Review Panel Report, Sable Gas Projects, October 1997, Appendix VI, National Energy Board Decision on TQM motion for Delay – Ruling on Comparative Hearings and Deferral of Decision Making, at pp.131-2.

Chapter 3

Tolls and Tariffs

Keystone requested approval of its proposed toll methodology and tariff for the Project pursuant to Part IV of the NEB Act. Keystone also sought to be regulated on a complaint basis for toll and tariff purposes.

3.1 Tolls

Keystone proposes to charge tolls for two types of service: Committed Service which is supported by a long-term Transportation Service Agreement (TSA) and for which Committed Tolls would be charged; and Uncommitted Service which is not supported by a TSA and for which Uncommitted Tolls would be charged.

Committed Tolls

Keystone submitted that its Committed Tolls are not based on a traditional cost of service methodology and that Keystone has accepted certain financial risks. Committed Tolls were negotiated and designed to recover a combination of fixed and variable costs.

The fixed portion of the Committed Toll is designed to recover invested capital and would not change over the term of the TSA. It is also levelized to provide toll predictability and stability. The fixed component of the toll decreases as the length of contact (5, 10, 15 and 20 years) increases, recognizing the additional financial commitment provided by shippers that subscribed to longer-term TSAs. The fixed component of the Committed Toll is required to be paid whether crude oil is shipped or not.

Within two months of regulatory approval, the capital expenditures for the construction of the Project would be re-estimated. The fixed portion of the Committed Toll would change at the percentage rate equal to the percentage change between the re-estimated Project costs and the original estimated Project costs. Not more than two years following the start up of the Project, a final determination of capital costs would be made and the fixed portion of the Committed Toll would either increase or decrease at a percentage rate equal to one-half of the percentage change between the final Project costs and the re-estimated Project costs. To offer additional toll certainty and to align with shippers in a desire to minimize construction costs, Keystone would assume the remaining 50 percent change in construction costs.

Keystone submitted that the variable portion of the Committed Toll is a flow-through of actual operating costs adjusted annually, which reflects the cost differences between the types of crude oil transported. Keystone also advised that after the third anniversary of commencement of operations, it would seek to negotiate an incentive arrangement for Operations Maintenance and Administration expenses.

Illustrative tolls provided by Keystone are shown in Table 3-1.

Table 3-1
Illustrative Committed Tolls from Hardisty, Alberta to the International Border ($Cdn)

Line	Term of Contract:	5 Years		10 Years		15 Years		20 Years	
	Units:	**$/m^3**	**$/bbl**	**$/m^3**	**$/bbl**	**$/m^3**	**$/bbl**	**$/m^3**	**$/bbl**
1	Fixed Toll	3.124	0.497	3.118	0.496	3.066	0.488	2.994	0.476
2	Variable Toll - Light	1.862	0.296	1.862	0.296	1.862	0.296	1.862	0.296
3	**Total Light (1 + 2)**	**4.986**	**0.793**	**4.980**	**0.792**	**4.928**	**0.784**	**4.856**	**0.772**
4	Variable Toll - Heavy	2.645	0.421	2.645	0.421	2.645	0.421	2.645	0.421
5	**Total Heavy (1 + 4)**	**5.769**	**0.918**	**5.763**	**0.917**	**5.711**	**0.909**	**5.639**	**0.897**

Uncommitted Tolls

Keystone submitted that the maximum Uncommitted Toll would be equivalent to the five year Committed toll (both fixed and variable components) including any adjustments, plus a 20 percent premium. In addition to sending the correct economic signals in respect of the appropriate toll (in the absence of long-term shipping commitments), Uncommitted Tolls were designed to be competitive with alternative methods of transportation. Comparisons of the Uncommitted Tolls to the Five Year Committed Tolls are provided in Table 3-2.

Table 3-2
Comparison of Uncommitted and Committed Tolls from Hardisty, Alberta to the International Border ($Cdn)

	Uncommitted		Five Year Committed	
Units	**$/m^3**	**$/bbl**	**$/m^3**	**$/bbl**
Light Crude	5.983	0.952	4.986	0.793
Heavy Crude	6.924	1.101	5.769	0.918

Should market conditions warrant, Keystone indicated that it may be required to offer uncommitted capacity at less than the maximum Uncommitted Toll. In the event that market conditions indicate the Uncommitted Toll is not competitive, Keystone would make the appropriate toll filing with the Board to reduce the level of the toll or to seek approval for a mechanism which allows discounting.

No concerns were raised and no parties sought to examine Keystone on the proposed methodology for the Committed and Uncommitted Tolls or the proposed discounting of Uncommitted Tolls.

3.2 Appropriateness of Contracted Capacity on Common Carrier Pipeline

Subsection 71(1) of the NEB Act requires that an oil pipeline company offer service to any party wishing to ship oil on its pipeline. Where capacity on an oil pipeline is contracted, the Board examines the open season process and the capacity to be made available for spot shipments in considering whether the pipeline is acting in a manner consistent with its common carrier obligations.

3.2.1 Open Season

In April 2005, non-binding expressions of interest from potential shippers on the proposed Keystone oil pipeline were solicited by TransCanada and interest in 79 500 m^3/d (500,000 b/d) of capacity was received. Between 1 November 2005 and 4 December 2005, TransCanada conducted an open season to seek binding expressions of interest from shippers.

Concurrent with the open season, TransCanada solicited two non-binding expressions of interest related to potential extensions to the Keystone Project, specifically an additional originating point in the Fort Saskatchewan, Alberta area and an extension to Cushing, Oklahoma.

Through the open season, potential shippers had the opportunity to sign TSAs to commit to shipping a minimum volume of 800 m^3/d (5,000 b/d) for a term of 5, 10, 15 or 20 years. Under the TSA, the shipper would have a one-time option to extend the contract by an additional five year period if the initial term was less than 20 years. Where the initial term is 20 years, the shipper would have a one-time option to extend the contract by a period of up to 10 years.

The TSA also provided committed shippers that contracted to ship a minimum of 4 000 m^3/d (25,000 b/d) for 10, 15 or 20 years with a 60-day option to commit to transport up to their proportionate share in the event of an extension of the pipeline or an increase in the physical capacity of the pipeline to no more than 95 400 m^3/d (600,000 b/d). On 30 January 2007, Keystone commenced a binding open season to expand the nominal capacity to 93 800 m^3/d (590,000 b/d) and to construct an extension of the U.S. portion of the pipeline to Cushing, Oklahoma. No eligible shipper took advantage of this option prior to the open season for expanding the pipeline and Keystone expects the option to have no future effect.

3.2.2 Available Capacity

Keystone stated that after the initial open season, long-term contracts totaling 54 100 m^3/d (340,000 b/d) were signed with an average contract duration of 18 years. Uncommitted capacity of 15 100 m^3/d (95,000 b/d), would therefore be available to all shippers. Under the Tariff, in an apportionment situation, committed shippers would have unapportioned priority access for their ship-or-pay commitments. Any remaining available capacity would be allocated on a pro rata basis among all remaining nominations.

In the event that shipper demand for additional contracted capacity materializes, Keystone stated that it may seek to market a portion of the presently unsubscribed capacity through a future open season process. However, Keystone indicated that it would reserve 4 000 m^3/d (25,000 b/d) to

be offered as uncommitted capacity. Keystone further noted that incremental capacity, measured as the difference between nominal and design capacities, would also typically be available up to an additional 7 600 m^3/d (48,000 b/d) for spot shipments.

No party expressed views regarding the adequacy of the open season or the resulting capacity allocation.

3.3 Method of Regulation

For the purpose of toll and tariff regulation, Keystone requested to be regulated as a Group 2 company on a complaint basis.

In the event that the Board was not inclined to approve this method of regulation, Keystone requested that it be permitted to make toll filings pursuant to paragraph 60(1)(a) of the *National Energy Board Act* and be relieved from filing Quarterly Surveillance Reports and Performance Measures and from keeping its books in accordance with the provisions of the *Oil Pipeline Uniform Accounting Regulations* (*OPUAR*).

In its application, Keystone cited the Alliance Pipeline Ltd. Reasons for Decision GH-3-97, for the factors that have been found relevant when the Board makes its determination. These factors include: the size of the facilities; whether the pipeline transports commodities for third parties; and, whether the pipeline is regulated under traditional cost of service methodology.

Keystone submitted that while the size of the Project is not insignificant, both the shipper base and the negotiated tolls support complaint-based toll and tariff regulation. Keystone's services are underpinned by TSAs signed by sophisticated shippers for an average of 18 years and for 78 percent of the pipeline's nominal capacity. The fixed component of the Committed Toll is not based on a traditional cost of service recovery methodology. Rather, Keystone is accepting risks not undertaken in a traditional cost of service model. Such risks include: system underutilization; the competitiveness of the Uncommitted Toll; contract non-renewals; and a level of construction cost overruns.

Keystone further submitted that the TSAs contain audit rights respecting calculation of the re-estimated Project costs (a key determinant of the fixed toll) and once the pipeline is operational, Keystone would undertake an incentive arrangement for the variable portion of the tolls. Further, shippers would have the on-going right to annually audit the derivation of the variable toll.

If disputes arise respecting the tolls charged or the terms of access to or transportation on the pipeline, all shippers, whether having signed long-term TSAs or not, would have the right to complain to the Board. It is for these reasons that Keystone requested regulation as a Group 2 company on a complaint basis.

No concerns were raised and no parties sought to examine Keystone on the requested method of regulation.

Views of the Board

Tolls and Tariff

Pursuant to sections 62 and 67 of the NEB Act, tolls must be just and reasonable and not unjustly discriminatory. The Board notes that no party to the proceeding expressed concerns with respect to Keystone's proposed toll methodology. The Board finds the proposed Committed Toll methodology would produce tolls that are just and reasonable given that they are the result of negotiations between sophisticated parties. The Board further finds the proposed methodology for calculating Uncommitted Tolls, applying a 20 percent premium to the five year committed toll, to be just and reasonable. The Board also accepts Keystone's proposal to file with the Board discounted uncommitted tolls in the event that market conditions render such tolls uncompetitive.

The application of different tolls among committed shippers and between committed and uncommitted shippers is reflective of the differing levels of support and risk undertaken in connection with the Keystone Project. Accordingly, the Board is of the view that the proposed differential tolling is not unjustly discriminatory. Further, the Board finds that the renewal rights and unapportioned access accorded to committed shippers do not result in unjust discrimination.

Contracted Capacity

In previous decisions, the Board has found that an oil pipeline acts in a manner consistent with its common carrier obligations when an open season is properly conducted and where the facilities are either readily expandable or capacity is left available for monthly nominations. In this case, the Board is satisfied that the open season conducted by TransCanada granted all potential shippers a fair and equal opportunity to participate. The Board notes that the pipeline is expandable to 94 000 m^3/d (591,000 b/d) and that Keystone currently has 15 100 m^3/d (95,000 b/d) or approximately 22 percent of nominal capacity available for spot shipments. Further, Keystone has committed to reserve 4 000 m^3/d (25,000 b/d), or approximately 6 percent of the pipeline's nominal capacity, to be offered as uncommitted capacity in addition to any incremental capacity available.

The Board notes that during the hearing no potential shipper came forward to indicate a firm intention to ship on an ongoing basis, nor was any view expressed disputing the fairness of the open season or the resulting capacity allocation. Accordingly, the Board finds that Keystone's common carrier status is maintained.

Open Access

In addition to a pipeline having adequate physical capacity, open access to transportation capacity is an important prerequisite to enable the effective and efficient operation of the market. The principle that shippers are to know the terms and conditions of access to a pipeline in advance of negotiations provides a more equal footing in the negotiation of a business arrangement by providing transparency and preventing the potential for an abuse of market power, either in terms of substance or perception.

The Board notes the market for oil transportation has evolved and will continue to evolve to embrace commercial arrangements better suited to meet the needs of market participants. This evolution has included the acceptance, under certain conditions and circumstances, of firm contractual commitments to capacity on oil pipelines operating under the common carrier obligations of the NEB Act. In most instances this has resulted in the majority of capacity being contractually committed to firm transportation services with a residual amount of capacity being left available to meet the requirements of uncontracted shippers.

The Board is of the view that the principles of open and transparent access apply equally to contracted and uncontracted transportation capacity. The Board is also of the view that the market would benefit from knowing the general terms and conditions of access to contracted capacity in advance of a pipeline company initiating an open season process. In the GH-2-87 Reasons for Decision[2], the Board expressed its views on the matters as follows:

> The Board, however, considers it essential that all terms and conditions of access to a pipeline be clearly reflected in the tariff in order to ensure that there are no undue service restrictions imposed by pipeline companies involved in the marketing or producing sectors of the natural gas sector. In the Board's view, prospective shippers are entitled to know the conditions of access to a pipeline system in advance of contract negotiations, as this knowledge will allow market participants to make informed supply and market decisions thereby contributing to the efficient functioning of the natural gas market.

While the GH-2-87 Reasons for Decision were written in the context of access to natural gas transportation, the regulatory principles of open access to transportation, and terms and conditions of access clearly reflected within a tariff are equally applicable to oil transportation services, particularly to oil pipeline systems with contracted capacity. Accordingly, the Board directs Keystone to amend its Tariff to include

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2 GH-2-87, TransCanada PipeLines Limited, Applications for Facilities and Approval of Toll Methodology and Related Tariff Matters, July 1988.

terms and conditions of access to contracted transportation capacity on the Keystone pipeline prior to the commencement of operations.

Method of Regulation

The *Memorandum of Guidance on Regulation of Group 2 Companies, December 1995* divides pipeline companies into two groups. Group 1 companies are generally subject to a greater degree of financial regulation and monitoring than Group 2 companies.

In the past, when determining whether a company should be designated as Group 1 or Group 2, the Board has considered the size of the facilities, whether the pipeline transports commodities for third parties and whether the pipeline is regulated under traditional cost of service methodology.

Given that both Committed and Uncommitted Tolls are determined with reference to negotiated agreements rather than on a traditional cost of service basis, the Board has concluded that Keystone should be designated as a Group 2 company. Keystone is therefore required to comply with the requirements of subsection 5(2) of the OPUAR.

Keystone is further required to comply with the following:

1. All toll filings pursuant to paragraph 60(1)(a) of the NEB Act shall be accompanied with supporting documentation for the tolls;

2. In the event that Keystone determines the Uncommitted Toll to be uncompetitive and files with the Board to reduce the level of the toll, Keystone is required to provide supporting documentation including an explanation of the discounting mechanism; and

3. When an application is filed with the Board, at that same time Keystone shall provide its shippers and interested parties with a notice of its application and advise that comments and concerns with respect to the application are to be provided in writing directly to the Board within 10 days of receipt of notification of the subject filing from Keystone.

Chapter 4

Engineering

In its examination of pipeline and facility applications, the Board considers relevant safety issues to ensure companies design, construct and operate their facilities in a safe manner. The Board determines whether the proposed project meets regulatory requirements concerning the safety of employees and the public and may examine issues such as the suitability of the proposed design, construction techniques, materials and control systems, pipeline security as well as potential risks to pipeline integrity.

4.1 Project Design

The Keystone Project consists of the following pipeline and related facilities:

- construction of 271 km of 762 mm (NPS 30) pipeline; 268 km in Alberta and 3 km in Saskatchewan;
- modifications to convert 864 km of Line 100-1 from gas to oil service;
- construction of 10 km of 864 mm (NPS 34) pipeline from Carman to Elm Creek, Manitoba;
- construction of 90 km of 762 mm (NPS 30) pipeline from Elm Creek, Manitoba to the U.S. border;
- installation of pigging facilities on the new and existing pipeline segments;
- construction of 16 pump stations; and
- construction of three operational tanks with a nominal capacity of 55 600 m^3 (350,000 bbl), associated manifold piping and metering facilities at Hardisty, Alberta.

A map of the Project is shown in Figure 1-1. Pipeline specifications for both the new construction and Line 100-1 replacement sections are summarized in Table 4-1.

Table 4-1
New Construction and Line 100-1 Replacement Pipeline Specifications

	Alberta/Saskatchewan Segment	Saskatchewan/ Manitoba Existing Segment	Manitoba Segment	
Outside Diameter	762 mm (NPS 30)	864 mm (NPS 34)	864 mm (NPS 34) (10 km)	762 mm (NPS 30) (90 km)
Wall Thickness	8.6 mm (Grade 550) or 9.8 mm (Grade 483)	Minimum of 9.5 mm (Grade 550) or 9.5 mm (Grade 483 or Grade 414)	9.7 mm (Grade 550) or 11.1 mm (Grade 483)	8.6 mm (Grade 550) or 9.8 mm (Grade 483)
Material Grade	550 MPa or 483 MPa	550 MPa, 483 MPa or 414 MPa	550 MPa or 483 MPa	
Material Category	Category 1	Category 1	Category 1	
Maximum Operating Pressure	9930 kPa (1440 psi)	6070 kPa (880 psi)	9930 kPa (1440 psi)	

The locations of the pump stations and pumping equipment are provided in Table 4-2.

Table 4-2
Pump Station Location and Equipment

Pump Station Number	Pump Station Name	Province	Chainage (KP)	Number of Pumping Units	Motor Size (kW)
PS 5	Hardisty	AB	0.0	4	3000
PS 6	Lakesend	AB	48.6	2	3000
PS 7	Monitor	AB	104.4	3	3000
PS 8	Oyen	AB	162.3	3	3000
PS 9	Bindloss	AB	230.8	3	3000
PS 11	Cabri	SK	361.0	2	3000
PS 13	Herbert	SK	461.0	2	3000
PS 15	Caron	SK	564.4	3	3000
PS 17	Regina	SK	669.2	2	3000
PS 18	Kendal	SK	720.6	2	3000
PS 19	Grenfell	SK	774.6	2	3000
PS 21	Moosomin	SK	879.7	2	3000
PS 23	Rapid City	MB	987.7	2	3000
PS 25	Portage la Prairie	MB	1096.6	2	3000
PS 26	Carman	MB	1159.6	3	3000
PS 27	Haskett	MB	1223.6	2	3000

Keystone submitted that the proposed new pipeline segments and facilities of the Project would be designed, constructed and operated in accordance with the Board's *Onshore Pipeline Regulations, 1999* (OPR-99), Canadian Standards Association (CSA) Z662-03 and all other applicable standards, specifications and codes referenced in Keystone's application. Specific design standards, material specifications and construction procedures for liquid pipelines would be developed as part of the detailed engineering phase and would also comply with the requirements of OPR-99 and CSA Z662-03. Where required, Keystone stated it involved

independent engineering consultants in the design and review of the Project, to ensure the Keystone pipeline would be suitable for crude oil service.

4.2 Project Construction

Keystone indicated it is planning to construct three major watercourse crossings using the horizontal directionally drilled (HDD) crossing technique. The water crossings are:

- Red Deer River, Alberta;
- South Saskatchewan River, Alberta; and
- Boyne River, Manitoba.

A preliminary report on the geotechnical evaluation of the three major crossings, which was prepared for Keystone, concluded that it is feasible to directionally drill all three crossings. Given the relative size of the watercourse crossings, Keystone also had an HDD feasibility report prepared for the proposed Red Deer and South Saskatchewan river crossings. The report concluded that the crossings do not pose a significant difficulty to an HDD methodology.

Keystone stated that welding and testing would be completed in accordance with CSA Z662-03. The specific welding procedure would be produced to match the material properties of both new and existing pipe. Non-destructive testing of all welds using either radiographic or ultrasonic inspection would be employed to ensure the field weld quality.

4.3 Line 100-1 Change in Service and Integrity

As part of its application, Keystone sought approval to convert approximately 864 km of 864 mm (NPS 34) pipeline of TransCanada's Mainline between Burstall, Saskatchewan and Carman, Manitoba (Line 100-1) from natural gas to oil transmission service. In order to determine the pipeline's suitability for liquid service, Keystone stated it conducted an engineering assessment on Line 100-1 in accordance with CSA Z662-03 Clause 10.11.3. The engineering assessment consisted of a due diligence review of Line 100-1 and a pipeline risk assessment of new and existing pipeline segments.

Keystone indicated that the due diligence review it conducted included a review of TransCanada's design, operations and maintenance records of Line 100-1 as well as discussions with TransCanada's subject matter experts. Keystone then had a pipeline risk assessment prepared by consultants which used information from the due diligence review. Keystone submitted that the pipeline risk assessment consisted of a failure threat assessment defining the probability of a failure and an analysis defining the consequences of failure.

Keystone submitted that the engineering assessment determined that Line 100-1 is suitable for liquid service upon the implementation of several actions and modifications prior to and during the operation of Line 100-1 in liquid service. Keystone committed to submit to the Board an updated engineering assessment incorporating the results of the corrective actions and modifications.

In order to provide the required level of assurance of pipeline integrity on Line 100-1, Keystone determined that it would be necessary to complete a crack detection in-line inspection (ILI) before the end of gas service and complete subsequent investigations and repairs prior to liquid service. Keystone stated that this approach would provide better certainty that Line 100-1 would perform properly in oil service than the results of a hydrostatic test to 1.25 times the maximum operating pressure (MOP).

Keystone indicated that Line 100-1 contains corrosion fatigue sensitive features which in oil service would be subjected to large pressure cycles. Under these circumstances, Keystone was of the view that hydrostatic testing is an ineffective integrity management tool as it would not verify the pipeline's integrity when put into liquid service. It would merely establish the minimum static strength of a pipeline at the time of testing. Keystone indicated that failure could potentially occur during the filling of the line. Furthermore, a hydrotest is a binary test that provides no information on potential flaws that remain, other than the flaws that do not exceed the envelope of dimensions that would have failed at test pressure.

Keystone also stated that hydrostatically pressure testing Line 100-1 would have two significant impacts. The first impact would be a delay to the Project schedule of one quarter of one year. The second impact would be increased costs from hydrostatic testing and the need to accelerate construction activities.

Keystone submitted that conducting ILI on Line 100-1 would allow Keystone to better manage the integrity of the pipeline as it provides more complete information on the inherent defects in the line. Keystone indicated that crack detection ILI tools have been used extensively and successfully to manage cracking in many pipelines and that the detection capability of such tools is excellent and is improving over time. The benefit of ILI, as submitted by Keystone, is that it would allow Keystone to implement a defect management approach where it can predict how cracks would grow and remove them at the right time. Keystone committed to repair all flaws that would not meet a rupture pressure ratio of 1.25, would leak, or otherwise fail by corrosion fatigue within two years of operation based upon the design pressure spectrum. Keystone also committed to conducting a ground-based leak detection survey while the pipeline is in gas service, to ensure that the pipeline does not leak.

During the oral portion of the hearing, Keystone agreed to complete a second ILI of Line 100-1 within one year of liquid operation. With a second ILI run after one year, Keystone stated that it would be able to perform more analysis and compare the results from the two tool runs to validate the methods being used to manage the integrity of the pipeline. Keystone expected there would be sufficient pressure cycling of the line in the first year of operation to allow it to assess actual defect growth rates.

Keystone stated that it would adopt TransCanada's Integrity Management Program and modify the methodology for liquid service. Keystone submitted that the overall objective of TransCanada's Integrity Management Program is to establish and maintain acceptable levels of integrity by reducing environmental impacts, ensuring safety of the public and company employees, protecting the installed pipelines and facilities, and maintaining reliability. Keystone indicated that a risk assessment approach to identifying potential integrity threats would be used to initiate appropriate inspection and mitigation activities. Keystone stated it would perform an

economic assessment and weigh both the economic impacts of conducting additional integrity management activities against the consequences of a failure. Keystone stated that the goal of its integrity program is to achieve zero ruptures and leaks. However, Keystone stated there would be considerable financial costs to ensure a zero rupture condition and these costs would far outweigh the benefit given the low probability of a rupture occurring.

4.4 Project Operations and Safety

Keystone stated it would operate the pipeline and associated facilities in accordance with all governing regulatory requirements, permit conditions and other approvals, including the OPR-99 and CSA Z662-03. To address both routine and non-routine pipeline system maintenance, Keystone submitted that it would use the existing registry of TransCanada Operating Procedures (TOPs). Keystone indicated that in areas where oil-related processes and procedures do not exist, they would be created by Keystone with the input of consultants as required. Keystone further stated that operating procedures would be reviewed by professional engineers knowledgeable and experienced in liquids pipeline operation. Keystone also indicated that the development of oil-related TOPs would be completed in advance of the pipeline being placed in-service and would also be used for training its pipeline operators prior to the start of operations.

Keystone indicated that it would have an emergency response plan that would meet all regulatory requirements. The plan would ensure emergency response equipment, consisting of containment and recovery equipment for both land and water, is available at strategic locations along the pipeline system. Keystone would coordinate with emergency response agencies in the areas in which it operates to ensure appropriate communications, understanding and cooperation. Keystone submitted that emergency procedures and other necessary work instructions would be developed using TransCanada's existing policies and procedures and enhanced, where necessary, to incorporate Keystone pipeline operations.

Keystone stated that it would utilize a comprehensive Supervisory Control and Data Acquisition (SCADA) system situated within the Operations Control Centre (OCC) to remotely monitor and control the pipeline and tankage facilities. The OCC would be staffed by operators on a 24-hour per day, 7-day per week basis. A redundant, fully functional Backup Control Centre would be available should the OCC become interrupted for any reason. Keystone indicated that other features would be designed and installed as integral components of the SCADA system to protect the pipeline from over pressure conditions and to ensure operation within licensed pressure limits. Pump station discharge pressure would be controlled using an electro-hydraulic pressure control valve. In the event of a failure of the pressure control system, backup pressure devices (pressure switches and transmitters) would automatically respond to shut down a pump or pumps to protect downstream piping. In addition, an on-site system would be installed to provide pipeline pressure protection in the event communications with the SCADA host are interrupted.

During the detailed engineering stages of the Project, Keystone stated that a pipeline transient hydraulic system model would be developed. A comprehensive review of the entire pipeline system would be performed to identify any potential issues. Furthermore, Keystone indicated that the model would be enhanced to provide a pipeline simulator with the capability of replicating operation of the Keystone pipeline on a real time basis. Specific OCC procedures would then be developed, tested and refined through the use of this system. Keystone indicated

that the pipeline simulator would also be used to provide real time training of the OCC operators under a variety of conditions, including leaks and other upset conditions, in order to familiarize personnel and ensure appropriate responses.

Keystone submitted that it plans to invest in a state-of-the-art SCADA and leak detection system. Keystone stated the pipeline would have a computer-based leak detection system that would report through the SCADA system to the OCC and would provide the operator with enhanced capabilities related to the early detection and location of leaks. The leak detection system hardware would be comprised of both a main and fully-redundant hot standby system. Where required, inline flow meter, suction pressure, discharge pressure and temperature transmitters to facilitate leak detection would be installed. Keystone indicated that the leak detection system would be designed and installed in accordance with CSA Z662-03 and OPR-99 to monitor flow, pressure and temperature imbalances characteristic of line leaks. Keystone also confirmed that it intends to employ a leak detection system in compliance with Annex E of CSA Z662-03, Recommended Practice for Liquid Hydrocarbon Pipeline System Leak Detection. Keystone stated that a preliminary investigation into the level of attainable performance of the leak detection system indicates the following detection times for various sizes of leaks:

Leak Relative to Pipeline Flow	Approximate Detection Time (minutes)
2%	102
5%	45
15%	18
50%	9

With respect to the actual operation of the Project, Keystone stated that it intends to enter into an Operating Services Agreement with TransCanada for the provision of operating services. Keystone indicated that a formalized relationship would exist and the scope and details of the agreement would be finalized in advance of the pipeline in-service date.

Views of the Board

The Board notes that the proposed new pipeline segments and facilities would be designed, constructed and operated in accordance with the OPR-99, CSA Z662-03 and all other applicable standards, specifications and codes. The Board is of the view that the general design of the Project is appropriate for its intended use. However, the Board is mindful of Keystone's plan to use TransCanada's existing registry of operating procedures, which deal exclusively with gas service, and that specific design standards, material specifications and construction procedures for liquid pipelines have yet to be developed. The Board expects Keystone to uphold its commitment to ensure that those involved in the detailed design of the facilities and the development of liquid operating procedures are competent and have the appropriate experience in designing and operating oil facilities. The Board notes that the 2007 edition of CSA Z662 has been released and reminds Keystone that it must comply with CSA Z662-07 on a go forward basis. The Board also expects that Keystone would ensure operators have received sufficient training prior to the start of liquid

operations to ensure the safe operation of the pipeline and related facilities.

Accordingly, in order to verify that appropriate training and procedures are in place, Keystone shall file, prior to the submission of its first leave to open application, confirmation from an officer of the Company that all the liquid related operating procedures are completed and implemented and that operators have been trained in these procedures.

To help ensure the safe construction and operation of the proposed facilities, the Board also conditions Keystone to submit its field joining program, a drill execution plan for each HDD crossing, a Construction Safety Manual, its pressure testing program and an emergency response plan for pressure testing activities. To facilitate potential Board inspections, the Board further conditions Keystone to submit its final pipeline construction specifications along with a detailed construction schedule and to maintain at each construction site a copy of the welding and non-destructive testing procedures.

With respect to the change in service of Line 100-1, the Board accepts Keystone's approach, in this instance, for managing the integrity of the pipeline. While the Board values hydrostatic pressure testing as a means of ensuring fitness for purpose, the Board recognizes the binary nature of the test results. Although the detection capability of defects in ILI tools is not 100 percent, the Board notes that ILI has been used extensively as an integrity management tool in pipelines. Given Keystone's commitment to conducting two ILI tool runs in addition to a leak detection survey, the Board is prepared to approve Keystone's proposed method to ensure Line 100-1 would be fit for liquid service. Dual ILI tool runs would provide a more insightful examination of the condition of Line 100-1 and would allow Keystone the opportunity to determine actual defect growth rates caused by the cyclic loading of liquid service operations.

To help ensure the safe operation of Line 100-1, the Board expects Keystone to use the best available technology when selecting the ILI tools. The Board also expects increased vigilance in the operation and maintenance of Line 100-1 during the first year of operation, given that Keystone will only have the results of the first ILI. Accordingly, Keystone will be expected to meet the following conditions, as detailed in the Certificate Conditions found in Appendix V:

- Keystone shall file, prior to the submission of its first leave to open application, its integrity management program and emergency procedures manual with the Board. In conjunction with the emergency procedures manual, Keystone shall file its liaison program and continuing education program for the Project. The Board expects the emergency procedures manual

to identify the high consequence areas, including municipal or residential water sources, along or near the pipeline route and specific plans to ensure these areas are protected.

- Keystone shall engage an independent third party to qualify the in-line inspection of Line 100-1 in gas service. The scope of the third party activities and deliverables shall be determined by the Board and provided to Keystone. Keystone shall select the third party from a list provided by the Board. The final report of the third party reviewer shall be submitted to the Board.
- Keystone shall also engage an independent third party to perform an independent verification of an updated engineering assessment of Line 100-1. The scope of the third party activities and deliverables shall be determined by the Board and provided to Keystone. Keystone shall select the third party from a list provided by the Board. The final report of the third party reviewer shall be submitted to the Board. In addition, Keystone shall be required to file with the Board for approval a final engineering assessment that determines Line 100-1 is suitable for liquid service. The Board expects the engineering assessment to consider, in addition to CSA Z662-07 requirements, the line fill plan, the third party final report and the findings of performance testing conducted to ascertain the dynamic response of the pipe materials to fatigue loading representative of the pressure spectrum anticipated in liquid service.
- To ensure all modifications necessary to make Line 100-1 fit for oil service are completed prior to the line going into liquid service, Keystone shall file a commitments tracking table indicating the status of all commitments made prior to and during the hearing. Monthly updates of the table shall be filed with the Board until final leave to open is granted.
- Keystone shall conduct line patrolling of Line 100-1 once a week during the first year of operation.
- Keystone shall conduct boom deployment and ice cutting drill exercises prior to its first leave to open application.
- Keystone shall report to the Board all reportable accidents and incidents on Line 100-1, as defined by the Transportation Safety Board Regulations, during the first year of operation.

In keeping with the life-cycle approach used in this hearing, the Board will dedicate resources to monitoring the post-approval actions to be taken by Keystone in implementing this decision. The Board expects Keystone to dedicate the necessary resources to meet its commitments and to support the Board in its monitoring.

Chapter 5

Land Matters

The Board expects companies to provide a description and rationale for both permanent and temporary lands that will be required for a project in order to assess the extent of new lands to be affected by the project. In addition, companies are required to advise the Board if they are using any existing land rights or if there are areas where no new land rights are required.

The Board also requires a description of the land acquisition process as well as the status of acquisition activities. This allows the Board to assess the appropriateness of the acquisition process and to be aware of the timing of acquisition. Companies must provide the Board with a copy of the sample notices provided to landowners pursuant to subsection 87(1) of the NEB Act as well as all forms of the acquisition agreements. This information enables the Board to verify that the agreements and notices comply with the requirements of the NEB Act and that the rights of landowners are protected.

5.1 Land and Land Rights

The Project traverses lands in Alberta, Saskatchewan and Manitoba. Land and land rights required by Keystone for construction, operation and maintenance of the Project are needed for the new pipeline segments, pump stations, and cathodic protection facilities. In addition, Keystone will require the existing land rights from TransCanada on Line 100-1.

New Pipeline Segments (Easement and Temporary Workspace)

The Project includes two new sections of pipeline, the first being in NW 29-42-9-W4M near Hardisty, Alberta to a point near Burstall, Saskatchewan in SW 9-20-29-W3M. The second section commences in SE 24-10-5-WPM near Carman, Manitoba and terminates at the Canada/U.S. border within SE 5-1-4-WPM near Haskett, Manitoba. For the new construction areas in Alberta and Manitoba, Keystone stated it would require a new permanent easement of 20 metres and approximately 10 metres of temporary work space.

Keystone stated that approximately 38 percent of the affected lands in Alberta are provincial Crown lands and the remainder is privately owned parcels. For the new construction segments in Manitoba, Keystone stated that the lands are privately owned.

Existing Line 100-1 (Easement & Temporary Workspace)

The new segments of pipeline would be connected to the existing TransCanada Mainline Line 100-1 starting at a point east of TransCanada's Burstall Compressor Station No. 2 in SW 9-20-29-W3M and ending at its Carman Sales Meter Station in SE 24-10-5-WPM. Keystone's acquisition of Line 100-1 will include the assignment of a 9.906 metre RoW from TransCanada. This represents a partial assignment of TransCanada's existing 19.812 metre easement.

Keystone stated that properties on the existing Line 100-1 section are primarily private lands with a small number of Crown-owned properties.

New Pump Stations

The Project includes the installation of 16 new pump stations along the route in Alberta, Saskatchewan and Manitoba. Keystone stated that eight pump stations would be located on private lands. The remaining pump stations would be located on existing compressor station lands owned by TransCanada. The total land area required for each pump station is approximately 2.0 hectares.

Cathodic Protection Facilities

Keystone stated that it would be installing and maintaining a cathodic protection system along the entire length of the Project. The approximate easement area for each cathodic protection facility is 20 metres by 100 metres in size with an additional area of approximately 5 metres by 100 metres to facilitate a cable. Keystone stated that the specific location of these facilities would be determined during the detailed design phase.

5.2 Land Acquisition Process

Keystone indicated that most land acquisition activities would occur from January/February 2007 to 30 April 2008.

Keystone would precede land acquisition negotiations by serving a notice to landowners under section 87(1) of the NEB Act. Keystone further indicated that, when landowners are served their section 87(1) Notice, they would also be provided with a copy of the NEB publication, *Pipeline Regulation in Canada: A Guide for Landowners and the Public*.

Land Acquisition Agreements

As part of its application, Keystone submitted copies of its land acquisition agreements as well as its form of section 87(1) Notice. Keystone did not provide copies of the form of agreement for temporary workspace since those agreements are not required for the subsequent operation of the pipeline.

Views of the Board

The Board finds that Keystone's anticipated requirements for permanent and temporary land rights are reasonable. The land rights documentation and acquisition process proposed by Keystone are also acceptable to the Board.

Chapter 6

Public Consultation

The Board promotes the undertaking by regulated companies of an appropriate level of public involvement commensurate with the setting, as well as the nature and magnitude of each project.

This chapter addresses Keystone's public consultation program. Keystone's consultation with potential shippers is discussed in Chapter 3 and Aboriginal engagement matters are discussed in Chapter 7.

6.1 Keystone's Consultation Program

Keystone adopted TransCanada's consultation practice, which is to develop and adapt consultation programs according to the nature, location and effects of a project. Keystone considered that the Project impacts would vary according to the different segments of the Project. Therefore, the consultation program for the Keystone Project was adapted for the different segments of the Project: new pipeline and pump stations; change of service activities along the existing pipeline and new pump stations along the existing pipeline. The consultation program also considered the baseline knowledge which stakeholders in different regions of the Project were expected to have about pipeline construction and the oil and gas industry.

Keystone initiated its consultation program in February 2005 when the Project was publicly announced. The program involved a variety of activities including direct contact with landowners, meetings with interest groups and government officials, public notices, open houses and newsletters. Keystone developed and refined the proposed route based upon feedback from stakeholders and stated in its application that all concerns raised by stakeholders have been addressed or are expected to be resolved to the satisfaction of the stakeholder.

Keystone stated that consultation will continue through the construction phase and into operations when stakeholder engagement will transition from the Keystone project team into TransCanada's ongoing community relations program, including the Integrated Public Awareness Program.

Views of Parties

Both the Kessler Landowners Group (KLG) and the Alberta Association of Pipeline Landowners indicated they had some outstanding concerns and required further information about how the Project would impact their ranching and agricultural operations. For further information regarding these concerns, refer to Chapter 8.3.2 Impacts to Agricultural Operations.

Views of Keystone

Keystone stated that it is committed to working with landowners to resolve concerns as it is Keystone's experience that meaningful consultation builds better projects. Keystone also committed to meet with all landowners to provide additional information on the Keystone Project and to mutually develop mitigation plans that will be implemented prior to and throughout construction activities. Keystone committed to resolving outstanding concerns prior to construction but noted that some issues regarding appropriate compensation remain and would require further discussion.

Keystone stated it had requested an opportunity to meet with the KLG as a group, but to date the KLG has not accommodated this request. However, Keystone noted it had spoken with Mr. Butt, a representative of the KLG, on several occasions to discuss the KLG concerns.

Views of the Board

The Board notes that Keystone took into consideration the impacts which the different segments of the Project would have on stakeholders as well as the level of stakeholder familiarity with pipeline projects, and modified its consultation program accordingly. Additionally, the company identified potentially affected landowners and other stakeholders, used appropriate methods to disseminate Project information and engage the public in consultation activities, and was responsive in addressing concerns raised by stakeholders.

The Board notes that Keystone has committed to seek to address all outstanding landowner concerns prior to construction and to ongoing consultation through TransCanada's community relations program. The Board expects that stakeholder concerns will be addressed as they arise through the lifecycle of the Project. The Board encourages the KLG and Keystone to meet and share information about Project impacts, discuss all outstanding concerns, and seek mutually agreeable solutions.

The Board is satisfied that Keystone's public consultation program was commensurate with the nature, magnitude and setting of the Project.

Chapter 7

Aboriginal Matters

7.1 Participation of Aboriginal Groups in the Regulatory Process

Two Aboriginal groups actively participated in the regulatory process for the Keystone Project: Standing Buffalo Dakota First Nation, located near Fort Qu'Appelle, Saskatchewan and five First Nations in southern Manitoba known collectively as the Dakota Nations of Manitoba.

Standing Buffalo Dakota First Nation

Standing Buffalo Dakota First Nation (Standing Buffalo) filed an application for intervenor status on 22 February 2007, stating its interest in the proceeding was related to unextinguished Aboriginal title, self governance rights and historic allyship status. On 16 April 2007, Standing Buffalo made a late filing of its written evidence and requested that the Board allow their Elders to provide oral traditional evidence in their own language during the oral portion of the hearing.

On 19 April 2007, the Board accepted the late filing of Standing Buffalo's evidence and announced that the majority of the oral hearing would be held in Calgary, Alberta, but that it would also schedule two days of hearing in Regina, Saskatchewan to accommodate the participation of Standing Buffalo.

The hearing in Regina opened with a pipe ceremony conducted by the Standing Buffalo Elders. The applicant presented an overview of the Project and made a witness panel available for cross-examination by counsel for Standing Buffalo. Elder Goodwill, Elder Thorne and Elder Tawiyala provided their oral traditional evidence and Chief Redman provided oral testimony. Parties were also given the opportunity to question these witnesses. Counsel for Standing Buffalo provided oral argument and also filed written argument.

During the proceeding, the Board asked an Information Request of Standing Buffalo about how the Project would impact its current use of lands and resources for traditional purposes as well as other environmental or socio-economic factors. In addition, at the hearing Board counsel and Members of the Board Panel asked the Elders questions to understand better how the Project would impact Standing Buffalo.

Dakota Nations of Manitoba

The Birdtail Sioux, Canupawakpa, Dakota Plains, Dakota Tipi and Sioux Valley Dakota First Nations filed applications for intervenor status and noted that their interests would be pursued collectively as the Dakota Nations of Manitoba. The Dakota Nations of Manitoba indicated that their interest in the proceeding was related to the fact that the Project would pass through and impact their traditional territory in southern Manitoba. They stated they are not signatories to a treaty and Canada has not undertaken actions to discharge its legal obligation and fiduciary duty to consult with the Dakota in respect of the Project. In addition, they stated that the applicant has

not met its legal obligations to consult or enter into formal agreements. They indicated that they would support in principle the approval and construction of the Project if and when their issues have been comprehensively dealt with to their satisfaction.

In their intervention, the Dakota Nations of Manitoba requested that the Board add the following to its List of Issues set out in Appendix 1 of the Board's Hearing Order:

> Outstanding matters flowing from unresolved issues concerning Dakota traditional territories within what is now the Province of Manitoba and in particular the claim of the Dakota Nations of Manitoba based on unextinguished Aboriginal title and Governance rights.

After considering this request, the Board sent a letter on 2 March 2007 directly to the Dakota Nations of Manitoba outlining its decision that no addition to the List of Issues was required. The Board indicated that in all cases it considers the potential effects of a project on Aboriginals within the project area. Specifically, under Issue #5 in the List of Issues, the Board will examine the potential impacts of the Project on the current use of lands and resources for traditional purposes and will thoroughly examine the socio-economic impacts of the Project.

When the Board announced the location of the oral public hearing on 19 April 2007, it noted that the five Dakota Nations of Manitoba had not filed written evidence or requested the opportunity to make an oral statement at the hearing. Accordingly, the Board did not schedule hearing time in Manitoba to facilitate the participation of the Dakota Nations of Manitoba. The Board did however indicate that should this situation change through the filing of written evidence, it would consider making arrangements for additional hearing time in Winnipeg, Manitoba.

On 1 June 2007, the Dakota Nations of Manitoba informed the Board they would not be filing written evidence or formally participating in the oral hearing but would be filing written argument. The Dakota Nations of Manitoba indicated that preliminary discussions with both Canada and Keystone had been initiated. As a measure of good faith, the Dakota Nations of Manitoba wanted to allow time to explore the potential with Canada and Keystone to achieve agreements which would assure them that their issues would be addressed. On 20 June 2007, the Board received the written argument of the Dakota Nations of Manitoba.

7.2 Aboriginal Engagement

Keystone initiated its consultation activities with Aboriginal groups, as well as the general public, when the Project was publicly announced in February 2005. Keystone employed TransCanada staff to undertake the consultation with Aboriginal groups as TransCanada has existing relationships with Aboriginal people in the Project area. Keystone stated it was guided by TransCanada's Aboriginal Relations Policy when identifying and engaging communities that may be affected by the Project. Keystone also stated that federal and provincial Aboriginal consultation guidelines and the results of the Keystone Environmental and Socio-Economic Assessment provided direction in its consultation activities with Aboriginal peoples. Based on TransCanada's Aboriginal Relations Policy, Keystone contacted those Aboriginal communities located within approximately 50 km of the Project.

In Alberta, Keystone determined that no Aboriginal communities, including Métis settlement lands, were located within 50 km of the Project facilities. However, Keystone contacted the Siksika Nation (Siksika), as members of the Blackfoot Confederacy since TransCanada had an existing relationship with them. Keystone noted that a work plan had been developed with the Siksika to assist the Project team in identifying any traditional land use sites that may be important for determining the final route for the Project.

In Saskatchewan, Keystone initially determined that two Aboriginal groups may be impacted by the Project and initiated consultation with them. These two Aboriginal groups are Carry the Kettle First Nation (Carry the Kettle) and Treaty 4 First Nations (Treaty 4).

Approximately 15 km of TransCanada RoW presently passes through Carry the Kettle reserve lands. Keystone determined that the existing easement agreement with this First Nation would require an amendment due to the change in product being transported. Keystone consulted with Carry the Kettle and Indian and Northern Affairs Canada. Keystone reached a new easement agreement in April 2006 which granted permission for crude oil transportation across Carry the Kettle reserve lands. A memorandum of understanding was also signed by TransCanada and Carry the Kettle in June 2006. Keystone submitted that TransCanada will continue communications with Carry the Kettle and make efforts to extend employment and business opportunities to them in accordance with TransCanada's Aboriginal Policy, the memorandum of understanding and TransCanada's business practices.

The Project route is located within the lands traditionally used by the signatories to Treaty 4. Keystone consulted with Treaty 4 as per the TransCanada and Treaty 4 Protocol Agreement which has been in place since July 2000. The Agreement specifies that Treaty 4 will be the lead agency responsible for consultation with Treaty 4 communities that may be affected by a project. Keystone submitted that Treaty 4 representatives did not indicate any issues or concerns with the Project and their only interest was related to potential economic opportunities. Keystone committed to continue communication with Treaty 4 as the Project progresses.

Keystone initially determined that Long Plain First Nation, Birdtail Sioux First Nation and the Manitoba Métis Federation were the only Aboriginal groups in Manitoba with interests within 50 km of the Project area and initiated consultation with them. As consultation activities proceeded, Keystone also consulted with the Dakota Ojibway Tribal Council, Roseau River First Nation and Sioux Valley Dakota Nation. Keystone stated in the Application that no concerns or issues were identified by these groups although there was an interest in potential employment opportunities from the Project. Based on a request by the Dakota Nations of Manitoba, on 26 March 2007 Keystone wrote a letter to the Minister of Indian and Northern Affairs Canada. The letter indicated that due to the lack of progress on discussions between the Crown and the Dakota Nations of Manitoba regarding land claims, there is the potential to delay discussions on Project-specific issues which are of concern to Keystone. Keystone urged the Minister to take immediate and appropriate action to address and resolve these matters.

In the application, Keystone stated that should other Aboriginal communities or organizations come forward with a bona fide interest in the Project, those interests would be addressed in a timely manner.

Keystone's application stated that no Aboriginal land claims had been identified along the route. However, Keystone became aware of the outstanding land claim of the Dakota Nations of Manitoba during consultation activities. Also, after the intervention of Standing Buffalo, Keystone became aware of this group and their outstanding land claim. Keystone then initiated consultation with Standing Buffalo.

Views of Standing Buffalo

Standing Buffalo initially stated it had not been consulted by Keystone about the Project. However, a meeting between Keystone and Standing Buffalo did take place on a 'without prejudice' basis on 5 June 2007. As this meeting was conducted on a without prejudice basis, no evidence was provided about the results of the meeting. Standing Buffalo stated it would continue to meet with Keystone to discuss how traditional sites and its lands can be respected.

Standing Buffalo submitted it holds unextinguished Aboriginal title, does not have a treaty with Canada and has not been able to negotiate a treaty despite over 70 meetings with the Saskatchewan Office of the Treaty Commissioner. Standing Buffalo noted that its negotiations with the Treaty Commissioner were winding down and it had to do something to advance its interests so it decided to intervene in both the OH-2-2007 Alida to Cromer Capacity Expansion and the Keystone proceedings. Through a series of letters to the Minister of Indian and Northern Affairs Canada, Standing Buffalo informed the federal government of the relationship between its decision to intervene in these proceedings and the ongoing lack of progress concerning its unextinguished Aboriginal title and its desire to enter into a treaty. To date, the letters have received no response and Canada has not met with Standing Buffalo about the Project or any issues related to its Aboriginal title.

Standing Buffalo claims that although it does not have a treaty with Canada, it has not given up its traditional lands and has an existing alliance with the British, now the Canadian Crown, that creates duties for the Crown similar to those accruing from a treaty. Standing Buffalo stated that the duties of the Crown include the duty to consult regarding the traditional lands which Standing Buffalo may select related to a flood settlement agreement. The Standing Buffalo Chief indicated that Standing Buffalo would meet with Keystone to resolve issues and reach an agreement with respect to the Project. However, in its view the federal government must also be at these meetings.

Standing Buffalo counsel argued that the Board should not issue a Certificate for the Project due to the failure of Canada to consult with Standing Buffalo concerning Dakota claims to Crown land to be affected by the Project. He also argued that if the Project is allowed to proceed before meaningful consultation occurs, the NEB will be in violation of section 35 of the *Constitution Act, 1982.*

Views of The Dakota Nations of Manitoba

The Dakota Nations of Manitoba stated that the Government of Canada has the primary duty to consult and accommodate respecting the Keystone Project. Although Keystone and the NEB have their own accommodation and consultation duties, neither Keystone's nor the NEB's work can be substituted for the primary duty held by the Crown. The Dakota Nations of Manitoba

stated they are prepared to recommend to their members that they support the Project provided their consultation needs are met.

As discussed previously, on 1 June 2007 the Dakota Nations of Manitoba indicated that discussions with both Canada and Keystone had been initiated and they would allow those to proceed.

In their final argument, the Dakota Nations of Manitoba requested that the Board consider the addition of the following condition to any approval that may be granted;

> TransCanada (Keystone) shall
>
> (i) continue consultation with the Dakota Nations of Manitoba with a view to assuring the requirements relating to Consultation and Accommodation in law and in the Board's Letter of Guidance dated 3 August 2007 (*sic*) are met; and
>
> (ii) shall provide updated reporting to the Board at the time that it files the detailed schedule provided for in [condition number to be specified]

They argued that imposing such a condition would reflect the Dakota Nations' conclusions respecting the Project.

Views of Keystone

Keystone stated it did not initially consult Standing Buffalo as it understood the Standing Buffalo community to be located just outside the 50 km zone. Also Keystone was not aware that Standing Buffalo was not a member of Treaty 4 and therefore not covered under the Treaty 4 Protocol Agreement with TransCanada. In addition, Keystone stated it did not receive instruction from Treaty 4 that Standing Buffalo was not a member of its organization. Once Standing Buffalo filed its intervention, Keystone made numerous unsuccessful attempts to engage Standing Buffalo until the 5 June 2007 meeting occurred on a 'without prejudice' basis.

TransCanada's representative indicated at the hearing they will continue to engage Standing Buffalo for the purpose of seeking common interests and determining how they can work together. In addition, Keystone stated it would like to have further dialogue with Standing Buffalo to determine if any of the 2.5 km of the land for new pipeline construction in Saskatchewan is used for traditional purposes or if any sites of concern might be on those lands. Additionally, it would like to better understand what Standing Buffalo's interests may be and how Standing Buffalo would be impacted by the Keystone Project or other TransCanada projects.

Keystone argued that according to the *Haida Nation v. British Columbia (Minister of Forests)*[3] decision, the requirement to consult is minimal if infringement is minimal. It went on to cite part of this decision and quoted; '…the only duty on the Crown may be to give notice, disclosure of information, and discuss any issues in response to the notice.' Keystone argued that this much has happened between Standing Buffalo and Keystone, albeit, not the Crown. Therefore,

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3 [2004] 3 S.C.R. 511, at para. 25 and 53.

Keystone submitted it has met its onus and so the arguments of the Standing Buffalo should be dismissed.

Keystone stated it met with the Dakota Nations of Manitoba after their intervention was filed and it would continue to meet with them.

7.3 Impacts of the Project on Aboriginal Peoples

In its application, Keystone submitted that the Project is expected to have minimal impact on Aboriginal peoples along the proposed route due to the distance of the Project facilities from Aboriginal communities and the types of lands traversed. Specifically, Keystone determined that only 5 Aboriginal groups were located within 50 km of the Project. Additionally, only 60 km of the total Project RoW would be new, lands traversed are primarily privately-owned and used for agricultural and livestock raising purposes and, there are no records of active trapping in the Project area. With respect to Crown lands, Keystone calculated that 38 percent of RoW in Alberta is on Crown lands and the remainder is on privately owned lands. There are no Crown lands in Saskatchewan where new construction would take place and of the 612 km of the existing 100-1 line RoW, 30 km is on Crown lands subject to grazing leases and 2 km is on unoccupied Crown lands. In Manitoba the proposed new construction is on privately-owned lands and of the 258 km of existing line RoW, 4 km is on leased Crown lands and 2 km is on unoccupied Crown land.

Views of Standing Buffalo Dakota First Nation

In the Dakota view, all land is sacred and the Dakota people have stewardship obligations towards their lands. Any kind of construction project is an interference with the land and therefore an impact according to the traditional belief system of Standing Buffalo.

During the oral portion of the hearing, Standing Buffalo Elders explained that although their reserve land is in Saskatchewan, their traditional territory is vast and extends beyond Saskatchewan and into Alberta, Manitoba and the U.S. They stated there is evidence to support the extent of their traditional territory from the archaeological, historical and traditional oral history records. They also explained that their territory is shared with the Cree and the Blackfoot and they all have a responsibility to protect sacred sites.

The Elders submitted that the Dakota people have built many sacred monuments and their traditional practice is to leave them undisturbed once completed as a sign of respect. Therefore, they may not currently use Dakota sites for traditional purposes but they are still sacred and must be protected. The Elders were concerned that the Project has the potential to disrupt these sites particularly if there was a leak or rupture of the pipeline. They were especially concerned because, in their view, TransCanada was responsible for desecrating some sites when the existing RoW was built. They indicated there are sacred sites along both the existing and proposed RoW but the Elders would require some time to identify their location in relation to the pipeline. They added that their concern is not limited to the destruction of sites in Saskatchewan, as they have a responsibility for their whole territory which extends into the other provinces were the Project is located.

In response to the Board's information request which asked Standing Buffalo to indicate how the Project would impact its current use of lands and resources for traditional purposes or other environmental or socio-economic factors, Standing Buffalo indicated that the Project cuts through its traditional territory and any building project is an interference with the land requiring, at least, a duty to consult. It stated this is particularly true when construction and operation of the project may disrupt wildlife, harm the land or waters by, for example, spills of noxious substances or disturb traditional sites and Crown lands claimed by the First Nation.

Standing Buffalo also expressed concern that the Project would limit even further the Crown lands that will be available for selection once its Treaty claim has been resolved and that would be available to meet the terms of its flood compensation agreement.

The Standing Buffalo Elders stated that Elders of the local First Nations should be involved in identifying where these sacred sites are and ensuring that protocols are respected when working around these sites.

Views of Dakota Nations of Manitoba

The Dakota Nations of Manitoba state that the Project would impact their traditional lands and explained that impacts cannot be limited to the pipeline corridor because pipelines have impacts on past uses and future land uses which would be open to the Manitoba Dakota First Nations once their claims are resolved. Neither the pipeline corridor nor the question of effects on current traditional use is relevant because the Dakota Nations of Manitoba have unextinguished title over a larger traditional territory.

Views of Keystone

At the hearing, Keystone re-iterated that it has not identified any Project impacts to the current use of lands for traditional purposes. However, it is willing to continue to meet with Aboriginal groups to discuss concerns now and throughout the life of the Project. Should traditional sites be identified during further consultation with Aboriginal groups, Keystone committed to make modifications to the Project design. Keystone indicated it had been meeting with the Dakota Nations of Manitoba and more work would be done with them to determine if there are any Project impacts. Keystone asserted that since there would be only 2.5 km of new pipeline construction in Saskatchewan and the remainder of the project in Saskatchewan would be the existing pipeline conversion, Keystone did not expect there to be any significant Project impacts to Standing Buffalo. However, Keystone is willing to establish an agreement and work plan with Standing Buffalo so they can assess what the next steps will be.

Views of the Board

Although discussions with Standing Buffalo and the Dakota Nations of Manitoba began somewhat later than they could have, overall, the Board is satisfied that Keystone meaningfully engaged Aboriginal groups potentially impacted by the Project. Aboriginal groups were provided with details of the Project as well as an opportunity to express their concerns to Keystone regarding Project impacts. Keystone considered the

concerns and made Project modifications where appropriate. Keystone also worked within established agreements which TransCanada had with Aboriginal groups in the area of the Project and persisted in its attempts to engage certain Aboriginal groups. The Board is also satisfied that Keystone has committed to ongoing consultation through TransCanada.

The evidence before the Board is that TransCanada, on behalf of Keystone, was not aware that Standing Buffalo and the Dakota Nations of Manitoba had asserted claims to land in the Project area. The Board is of the view that, since TransCanada has a long history of working in the area of the Keystone Project, it should have known or could have done more due diligence to determine claims that may exist in the area of the Keystone Project. The Board acknowledges that as soon as Keystone became aware that Standing Buffalo and the Dakota Nations of Manitoba had an interest in the Project area, it did take action and initiated consultation activities. The Board further notes that consultation with Carry the Kettle and Treaty 4 was based upon TransCanada's established protocol agreements and that Keystone is willing to establish similar agreements and work plans with other Aboriginal groups, including Standing Buffalo and the Dakota Nations of Manitoba.

Once an application is filed, all interested parties, including Aboriginal persons, have the opportunity to participate in the Board's processes to make their views known so they can be factored into the decision-making. With respect to the Keystone Project, the Board notes that Standing Buffalo and the Dakota Nations of Manitoba took the opportunity to participate in the proceeding and the Board undertook efforts to facilitate their participation. The Board agreed to late filings by Standing Buffalo and the Elders had an opportunity to provide oral testimony in their own language at the hearing. In addition, the Board held two hearing days in Regina to facilitate the participation of Standing Buffalo and was prepared to consider hearing time in Winnipeg for the benefit of the Dakota Nations of Manitoba. The Board notes it undertook to ensure it understood the concerns of Standing Buffalo by hearing the testimony of the Elders, making an Information Request and asking questions at the hearing.

The Board is satisfied that Standing Buffalo and the Dakota Nations of Manitoba were provided with an opportunity to participate fully in its process and to bring to the Board's attention all their concerns. The hearing process provided all parties with a forum in which they could receive further information, were able to question and challenge the evidence put forward by the parties, and present their own views and concerns with respect to the Keystone Project. Standing Buffalo and the Dakota Nations of Manitoba had the opportunity to present evidence, including any evidence of potential infringement the Project could have on their rights and interests. The Dakota Nations of Manitoba did not provide evidence at the hearing.

Standing Buffalo filed affidavit evidence and gave oral evidence at the hearing, which was carefully considered by the Board in the decision-making process. Standing Buffalo also suggested that the Project would further limit the Crown lands that would be available to meet the terms of its flood compensation agreement and any Treaty claim. In the Board's view, the evidence on this point is too speculative to warrant the Board's consideration of it as an impact given there are Crown lands available for selection and private lands available for purchase within the traditional territory claimed by Standing Buffalo.

It is not within the jurisdiction of the Board to deal with land claim matters. Accordingly, to the extent that the evidence provided by Standing Buffalo relates to its asserted land claim rather than the effects of this particular Project on its interests, it is of limited probative value to the consideration of the application before the Board.

Standing Buffalo presented evidence of a general nature as to the existence of sacred sites along the existing and proposed RoW. The Board notes Keystone's commitment to discuss with Standing Buffalo the potential for the Project to impact sacred sites, develop a work plan and incorporate mitigation to address specific impacts to sacred sites into its Environmental Protection Plan. The Board would encourage Standing Buffalo to bring to the attention of TransCanada its concerns with respect to impacts to sacred sites from existing projects and to involve their Elders in these discussions.

The Board notes that almost all the lands required for the Project are previously disturbed, are generally privately owned and are used primarily for ranching and agricultural purposes. Project impacts are therefore expected to be minimal and the Board is satisfied that potential impacts identified by Standing Buffalo which can be considered in respect of this application will be appropriately mitigated.

With respect to the request by the Dakota Nations of Manitoba for additional conditions, the Board notes that Keystone and the Dakota Nations of Manitoba have initiated consultations and that both parties have committed to continue these discussions. In addition, the Board notes Keystone's commitment to address concerns that are raised through all its ongoing consultation activities and its interest in developing agreements and work plans with Aboriginal groups in the area of the Project. The Board strongly supports the development of such arrangements and encourages project proponents to build relationships with Aboriginal groups with interests in the area of their projects. Given the commitments both parties have made to ongoing dialogue, the Board does not see a need to impose the conditions as outlined.

Chapter 8

Environment and Socio-Economic Matters

The Board considers environmental and socio-economic matters under both the CEA Act and the NEB Act. The Board expects applicants to identify and consider the effects a project may have on biophysical and socio-economic elements, the mitigation to reduce those effects, the significance of any residual effects once the mitigation has been applied and enhancements of project benefits.

8.1 Environmental and Socio-Economic Assessment Process

Keystone filed an Environment and Socio-Economic Assessment (ESA) for the Project and concluded that the Project will not have a significant adverse effect on any environmental or socio-economic resources provided the mitigation measures identified in the ESA are implemented during construction, operation, decommissioning and abandonment.

The proposed Project requires a Certificate of Public Convenience and Necessity under section 52 of the NEB Act, and thus triggers the requirement for an environmental screening under the CEA Act. In addition, pursuant to the CEA Act *Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements* (Federal Coordination Regulations), the NEB coordinated Responsible Authority (RA) and Federal Authority (FA) involvement in the CEA Act process. To reduce potential duplication, the Board and other RAs worked together to create an efficient screening process that would meet the needs of each in carrying out its environmental assessment responsibilities.

Under the Federal Coordination Regulations, the RAs are required to jointly determine the scope of the Environmental Assessment. After consulting with the other RAs and the CEA Agency, the Board circulated a draft Scope of the Environmental Assessment for comment to the FAs, relevant provincial agencies and Keystone. The Scope was then finalized and released on 15 March 2007. See Appendix VI for the Scope of the Environmental Assessment.

Following the oral portion of the hearing, on 25 July 2007, the Board issued a draft Environmental Screening Report (ESR) for public review and comment. The Board received comments from Environment Canada, Transport Canada, Indian and Northern Affairs Canada, and Standing Buffalo Dakota First Nation. Keystone subsequently filed comments.

The final ESR reflects parties' comments and the Board's assessment of the biophysical and socio-economic effects of the Project and mitigation measures based on the Project description, factors to be considered and the scope of those factors. Since the full report, including an executive summary, is included as Appendix VII, no portion of it has been reproduced in this Chapter.

Fisheries and Oceans Canada (DFO), in its role as RA, will conduct an environmental assessment specifically for watercourse crossings where an authorization under the *Fisheries Act* is required, and a CEA Act determination is triggered for DFO.

Views of the Board

Pursuant to the CEA Act, the Board has determined that taking into account the implementation of Keystone's proposed mitigation measures, compliance with the Board's regulatory requirements and the recommended conditions attached to the ESR, the construction and operation of the pipeline and associated facilities is not likely to cause significant adverse environmental effects.

With respect to its regulatory decision under the NEB Act, the Board has adopted the ESR and its recommendations. The Board has also considered additional socio-economic matters related to impacts of the Project on agricultural operations and employment. These are discussed in detail later in this Chapter. The Board is satisfied that all biophysical and socio-economic matters have been considered adequately in accordance with the requirements as specified in the Board's Filing Manual.

8.2 Scope of Assessment

Keystone stated that the scope of the ESA filed with its application was determined with reference to sections 15 and 16 of the CEA Act and the NEB Filing Manual. The ESA included in its scope of the Project, the physical works set out in Keystone's application as well as activities and undertakings considered to be in relation to these physical works. The ESA further defined the biophysical and socio-economic elements to be assessed and the spatial and temporal (i.e. distance and time) boundaries for the assessment of each element evaluated. The Keystone ESA did not assess upstream facilities that would provide supply to, or downstream facilities that would be served by, the Keystone pipeline except as applicable to its cumulative effects assessment.

Views of Parties

In final argument, the CEP submitted that there is evidence of a close connection between the proposed Project and the ConocoPhillips production facilities in Alberta, and the ConocoPhillips processing facilities in the U.S. The CEP stated that it would be an error for the Board to approve the Keystone pipeline without assessing the environmental impacts of both upstream and downstream facilities that may be directly connected to the pipeline and that might not proceed if the pipeline is not approved. The CEP further argued that by denying motions intended to obtain further information with respect to the relationship between upstream and downstream facilities and the Project, the Board had effectively denied the CEP the opportunity to appropriately assess the nature of Keystone's case and to persuade the Board of the need for a more comprehensive review of the Project.

KSG submitted that the Keystone pipeline originates in Hardisty, a crude oil market hub, and terminates at the international boundary in Manitoba. KSG argued that this situation was not analogous to the Sumas decision, which was dependent upon a finding of direct connection. With reference to the CEP's argument concerning the Board's denial of its motions, KSG argued that the scope of assessment was not before the Board when the decisions on those motions were made.

Keystone argued that there is no direct nexus between the Keystone pipeline and any particular upstream or downstream facility. In reply argument, Keystone noted that the proposed pipeline would connect an existing hub at Hardisty, Alberta to extra-jurisdictional markets in the U.S. Keystone submitted that no information about upstream and downstream facilities is required to adjudicate the application.

Views of the Board

The Scope of the Environmental Assessment pursuant to the CEA Act was released on 15 March 2007. The scoping document provides that the Project has two distinct components: the construction of new pipeline and other related facilities; and, the utilization and conversion of existing pipeline facilities. It goes on to state:

> The scope of the Project includes construction, operation, maintenance and foreseeable changes, and where relevant, the abandonment, decommissioning and rehabilitation of sites relating to the entire project and specifically, the following physical works and activities…

Subsection 15(3) of the CEA Act reads as follows:

> Where a project is in relation to a physical work, an environmental assessment shall be conducted in respect of every construction, operation, modification, decommissioning, abandonment or other undertaking in relation to that physical work that is proposed by the proponent or that is, in the opinion of
>
> (a) the responsible authority, or
>
> (b) where the project is referred to a mediator or a review panel, the Minister, after consulting with the responsible authority,
>
> likely to be carried out in relation to that physical work.

The Board is of the view that upstream facilities that would provide supply to the Keystone pipeline are not directly related to the Keystone Project, nor are they ancillary or subsidiary undertakings. Accordingly, they do not fall within the scope of the Project defined above. With respect to downstream facilities that would be served by the Keystone pipeline, the

Board remains of the view expressed in the Sumas Energy 2 Ruling on the Environmental Effects Motion[4], that the CEA Act does not contemplate that facilities located outside of Canada are to be included within the scope of a project located in Canada.[5] However, the cumulative effects assessment within Keystone's ESA and the Board's ESR, consider the effects of upstream facilities to the extent that they act in combination with the effects of the Project.

Under the NEB Act, the Board considers the environmental and socio-economic effects in Canada of upstream or downstream facilities where the necessary connection exists between those facilities and the application before the Board. As discussed in Chapter 2 of these Reasons, the Keystone pipeline commences at Hardisty, Alberta, a crude oil supply hub (See Figure 2-4) and delivers crude oil to markets at Wood River and Patoka, Illinois, points that form a major market hub for incoming and outgoing crude oil pipelines (See Figure 2-5). Given that the Keystone pipeline may be supplied by numerous sources and may serve a number of refineries located in PADD II, the Board finds that the upstream and downstream facilities are not sufficiently connected to the Keystone pipeline so as to make the effects of those facilities relevant to the Board's NEB Act decision.

The Board further considers it appropriate that the ESA does not consider the effects of upstream and downstream facilities except as applicable to the cumulative effects assessment, in conducting its environmental and socio-economic assessment of the Project.

8.3 Socio-Economic Matters

The Board expects companies to identify and consider the impacts a project may have on socio-economic conditions including the mitigation of negative impacts and enhancement of project benefits. Keystone filed an ESA for the Project and concluded that the Project will not have a significant adverse affect on any socio-economic resources provided the mitigation measures identified in the ESA are implemented during construction, operations, decommissioning and abandonment. The potential socio-economic effects covered by the CEA Act are discussed in the ESR in Appendix VII and potential socio-economic effects covered by the NEB Act are discussed in this section.

8.3.1 Impacts to Employment

Keystone submitted that the total direct and indirect jobs created during construction of the facilities would be approximately 646 person-years. It estimated there would be 17 full-time

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4 EH-1-2000, Sumas Energy 2 Inc., Facilities, March 2004, Appendix III, Ruling on the Environmental Effects Motion, 9 December 2002, p. 125.

5 *Ibid.*, page 130.

positions created during operation of the Project. Keystone also noted that the population in the Project area is almost fully employed.

No party to the proceeding raised concern with respect to the jobs that would be created by the Project however parties were concerned about the missed opportunities for job creation due to the lack of value-added processing of oil products to be shipped on the Keystone pipeline. This issue is discussed in Chapter 9.

8.3.2 Impacts to Agricultural Operations

In the application, Keystone stated that the Project would be constructed in areas that are primarily rural with small towns and villages and the majority of the pipeline traverses lands used primarily for farm and ranch cattle operations as well as agricultural operations.

The Kessler Landowners Group (KLG) intervened in the Keystone proceeding. The KLG is an association of 5 landowners located near Hardisty, Alberta. They carry out ranching and agricultural operations on lands which the proposed Project traverses. In their intervention they noted concerns related to the impact the Project would have on their operations.

Views of the Parties

The KLG stated that the Project will have a significant adverse economic and commercial impact on both the ranching and agricultural operations carried out by members of the KLG during construction, operations and abandonment of the Project. They submitted that any negative impacts on ranching and agricultural operations will be increased by the restrictive nature of the safety zone and if the pipeline is not buried to a sufficient depth. The KLG were also seeking assurances that Keystone will assume liability for all environmental contingencies, including liability for the abandonment of the pipeline. In addition, they were seeking further information from Keystone about the design and construction of the pipeline and how their ranching and agricultural operations will be impacted by the Project. Specifically, KLG sought information related to how their use of the RoW may be restricted.

The KLG stated in its final argument that although it maintained its position as articulated in its written evidence, the KLG focused its attention at the hearing primarily on the issue of abandonment of the pipeline. It argued that Keystone had not adequately demonstrated that the proposed Project will be properly abandoned in the future. KLG was concerned that the financial responsibility associated with environmental impacts from future abandonment activities would fall on members of the KLG or other similarly affected landowners. The KLG requested the Board include a condition on any Certificate issued for the Project requiring Keystone to take out a performance bond guaranteeing future reclamation of the proposed pipeline or make annual payments to an established reserve fund set up by Keystone for the purposes of ensuring that future abandonment is fiscally possible.

The Alberta Association of Pipeline Landowners filed a Letter of Comment stating they were not opposed to the Project if their concerns were addressed and further information was provided. The concerns related to pipeline depth of cover and adequacy of compensation. The information

requested included integrity data of the 'old line', detailed abandonment plans, emergency response plans and the composition of the product to be shipped in the pipeline.

Views of Keystone

Keystone stated that the Project is expected to operate for a minimum of 30 years and that decommissioning and abandonment activities will comply with all applicable federal and provincial regulatory requirements in force at the time. Keystone stated that once a decision is made to abandon the pipeline, a detailed plan would be prepared and an application would be made for the necessary approvals. The plan would take into consideration and address a number of factors including: consideration of legislative requirements at the time, public health and safety; pipeline salvage opportunities or alternative uses; current and future land uses; input from landowners; regulatory authorities, and other affected stakeholders; the comparative environmental effects of either abandoning the pipeline in place, or excavating and removing the pipeline; and water, road, railway, and utility crossing issues. Keystone stated it was not planning to establish a reserve fund or post a bond to address any environmental remediation.

Keystone also noted that it will indemnify landowners for any and all liabilities arising out of the construction and operation of the pipeline, with the exception of willful misconduct or gross negligence by the landowner.

Keystone stated it is committed to working with landowners, including the KLG, to reach mutually-agreeable resolutions to concerns and to develop and maintain positive relationships. Keystone also committed to meet with all landowners, including the directly-affected members of the KLG, to provide additional information on the Keystone Project and to mutually develop mitigation plans that will be implemented prior to and throughout construction activities.

Keystone submitted that its current financial wherewithal is strong and is evidenced by its ability to finance the Project through its parent company, TransCanada. Keystone stated it would bear the responsibility for any liability arising throughout the operational life of the facilities and ultimately it will be required to satisfy the Board of the propriety of the eventual abandonment plan.

Views of the Board

The Board is satisfied that Keystone has identified and considered all the socio-economic aspects of the Project and proposed suitable mitigation to minimize the negative impacts and enhance its benefits. The Board notes that although the KLG did not pursue their concerns of Project-related impacts to ranching and agricultural operations during the hearing, the KLG have stated that these concerns still exist. The Board notes Keystone's commitment to work with landowners, including the KLG, to reach mutually agreeable resolutions to such concerns and to develop mitigation plans. The Board encourages Keystone to follow through on this commitment and to provide any further information which landowner groups may require about the Project and its potential impacts.

With respect to issues associated with pipeline abandonment, the Board recognizes that abandonment is a real and valid concern of landowners. Currently companies are required to apply to the Board at the time of abandonment and at such time, an abandonment plan must be in place and approved by the Board. Abandonment plans must include evidence that all landowners and other persons potentially affected are sufficiently notified and have their rights protected. Further, should the Board approve the plan, an Order would be issued that may have conditions attached that would be monitored by the Board for compliance.

At present, there is no legislative or other requirement that companies assume abandonment related costs at the certification stage of a project. The Board notes that abandonment issues, such as the concerns raised by the KLG, have been and will remain under discussion at a broad level within industry. The Board will engage in the further developments expected in this area and in so doing will consult with interested and affected persons.

In light of Keystone's strong financial position and its commitment to address liability issues which may arise during the life of the Project, the Board will not impose a condition requiring Keystone to post a bond or establish a reserve fund. The Board however encourages Keystone to financially prepare itself for the eventual abandonment of its facilities.

Concerns respecting the loss of potential jobs to Canadians, particularly Albertans due to the lack of oil processing in Canada, are discussed in Chapter 9 of these Reasons.

Chapter 9

Impacts of the Project on Domestic Interests

Certain intervenors at the hearing expressed concern that if the Project were approved, there would be missed opportunities or negative consequences for domestic industries, employment and security of supply. Keystone and parties supporting the application took the position that there would be negative economic consequences if the Project were not approved on a timely basis.

Views of the Communications, Energy & Paperworkers Union of Canada (CEP)

The CEP took the position that without information about the nature, sources and end-uses of the oil products that would be transported by the pipeline, the Board does not have sufficient information to assess the likely economic, commercial, supply and market impacts of the removal of unprocessed heavy crude oil from Canada and whether the Project is in the public interest.

Assuming that the pipeline would be predominantly used to export heavy oil, the CEP argued that Project approval would mean foregoing the substantial economic development and job creation that would result had the bitumen been upgraded in Canada prior to export. The CEP submitted that exports must not occur unless they are surplus to Canadian needs, including those of the oil and gas industry.

In support of its position, the CEP tendered a report by Informetrica Limited (Informetrica Report). The Informetrica Report identified three different development scenarios that reflected the extent to which Canadian oil and gas resources may be transported by the Keystone pipeline.

The first scenario focused on the extraction of Canadian heavy oil for export to markets in the U.S. for further processing. The Informetrica Report claimed that the Canadian public interest would not be served if supplies of energy goods to Canadian refineries and petrochemical industries were truncated and the development of a diversified oil and gas industry in Canada was frustrated by a lack of supply.

The second scenario would see increased value-added for Canada whereby pipeline facilities would be built to transport heavy oil to Canadian upgraders. From there the light crude oil would be transported to refineries and other end-users, including petrochemical producers, in Canada. Under this scenario the pace of oil sands development would proceed in line with Canadian priorities rather than those of the U.S. The export of natural gas liquids as diluent would only occur where it was not needed as a feedstock for Canadian petrochemical industries. The Informetrica Report estimated that the expansion of the Canadian refining industry, as a source of demand for 63 600 m^3/d (400,000 b/d) of heavy oil, would add approximately 18,000 jobs per year to the Canadian economy and approximately 0.2 percent to Canada's Gross Domestic Product. The Informetrica Report claimed that the public interest would be served by

this scenario due to enhanced growth opportunities for many different firms in a number of industries.

The third scenario envisioned the expansion of oil and gas supply in Canada proceeding rapidly enough to fully satisfy the goals of the two previous scenarios. Under this scenario, increases in oil sands production would be sufficient to support the Canadian, and particularly Albertan petrochemical industries, and provide for future expansion. Upgrading would occur to approximately 66 percent of oil sands production and supplies would be sufficient to provide feedstock for the refining industry and higher value-added exports.

In final argument, the CEP indicated that it does not have concerns with current government policy and that the Board should in fact have regards to it in rendering its decision. The Union explained that it was not seeking a change to government policy since its views were closely aligned with the policy statement of the Alberta government. It reiterated the importance of the Board considering the advantages and burdens that may follow from approving or denying a project. In particular, it relied on comments made by the Board in the Alliance Pipeline case in support of its position that the Board should consider the potential for the Keystone Project to adversely affect the environment of Alberta communities or the commercial interests of persons other than the owners and users of the pipeline.

The CEP further urged the Board to take into account the proportional sharing provisions of the North American Free Trade Agreement (NAFTA), Article 605. The CEP viewed Article 605 as imposing constraints on future regulatory options and the authority of the Board to serve the public interest. Its view was that once exports commenced, Canada would be "locked-in" to maintaining a proportional share. The CEP also expressed the view that the domestic energy security safeguards outlined in section 118 of the NEB Act would be circumvented if a shipper applied for a short-term export order instead of a long-term licence. The overarching concern expressed by the CEP was that the Board might not have an opportunity in the future to consider whether the products the Project might export would be surplus to reasonably foreseeable Canadian needs.

Views of the Alberta Federation of Labour (AFL)

The AFL expressed the view that the potential economic and social impacts of the Project are significant and so the Board must consider the broader, long-term impacts of the Project. This would include an examination of the Project's implications for jobs, communities and economic development in Canada as well as for upgrading, refining, petrochemical and secondary industries. To do so, the AFL argued that the Board would need evidence on who the shippers are, the quantities and commodities that would be transported and the end-uses of the products shipped.

The AFL was concerned that if the Keystone Project was approved, North American energy companies would make investment and development decisions that would serve interests outside of Alberta and Canada. In contrast, if the pipeline was not approved, the AFL claimed that energy companies would be encouraged to invest in Canadian refineries. The AFL contended that every barrel of bitumen shipped to the U.S. would be a barrel of bitumen that was not available for value-added production and job creation in Alberta. On this point, the AFL relied

on the Informetrica Report which estimated that 18,000 jobs could be created in Canada if bitumen destined to be shipped to the U.S. via the Keystone pipeline was instead refined in Canada.

If the Keystone pipeline were approved, the AFL also expressed concern that the bitumen would no longer be a shut-in resource resulting in increased bitumen pricing. In its view, harmonized bitumen prices would undermine the Canadian downstream petroleum industry by rendering upgrading and refining facilities in Alberta economically unviable. The AFL noted that Canadian oil sands producers currently have proposals to build 14 new bitumen upgraders or to expand existing capacity in Alberta and that many, or possibly all, of these proposals may be jeopardized if the Keystone pipeline is allowed to proceed.

The AFL submitted that, if the NEB were to focus on the greater public interest, it could force industry, government, labour and other stakeholders to work together to develop a comprehensive plan for the development of Canadian energy resources.

The AFL suggested that the scope of the project assessment, as submitted by the Applicant, was too narrow. It asked the Board to construe the public interest broadly to include considerations of the impact that the Keystone pipeline will have on domestic interests. To achieve this, the AFL recommended the Board choose one of three options.

The first option, which was preferred by the AFL, was for the Board to deny the application based on a lack of evidence on whether the Project was in the public interest. The AFL submitted that the Board does not have facts about what the impacts of the Project will be on existing and proposed upgraders in Canada. In addition, the Board does not have facts about how the demand over time for oil will impact the current Canadian industry, or what impact denying the Keystone pipeline the ability to ship unprocessed bitumen to the U.S. would have on Canada. The AFL argued that these missing facts will ultimately impact what is at the core of its submissions: namely, employment opportunities.

The second option was for the Board to issue an interim order and then establish another process to address the issue of the public interest.

As a third alternative, the AFL suggested the Board delay its decision and seek guidance from government on energy policy, although it later clarified that this was not required since the Board has a wide latitude to consider all relevant factors in its decision making. The AFL indicated that while it did not agree with government energy policy, it was not asking the Board to change it.

Views of the Parkland Institute (Parkland)

Parkland claimed that by expanding the capacity to export bitumen, the Keystone pipeline would increase the pace of investment in the extraction and export of bitumen. In its view, adequate debate had not occurred on whether the expansion of the oil sands was in the interests of Albertans and Canadians.

Parkland noted that if the pipeline was approved, it would have the effect of reducing the heavy to light oil price differential caused by an oversupply of heavy oil. It claimed that narrowing the

differential would negatively impact the viability of upgrading and refining in Canada and would risk a loss of investment and jobs.

Parkland also expressed the view that the effects of proportional sharing and the NAFTA would have the irreversible effect of deepening the nation's reliance on raw exports.

Views of Dr. Laxer

Dr. Laxer provided a letter of comment suggesting that approval of the Keystone pipeline would undermine the long-term security of supply of oil to Canadians, which in his view is the paramount public interest. Since Canada does not have a strategic petroleum reserve, Eastern Canadians would be unduly exposed to the risk of politically-directed oil shortages. Dr. Laxer concluded that the Project should be denied as it would be in the public interest to reduce foreign imports to Eastern Canada and ensure Canada's security of supply.

Views of Keystone

Keystone took the position that the evidence of the CEP, the AFL, Parkland and Dr. Laxer related to the effects of exporting non-upgraded oil on domestic industries, employment and security of supply were irrelevant to the matters to be determined by the Board. In Keystone's view such evidence was not only inconsistent with, but contrary to, public policy that is properly under the purview of the federal and provincial governments. Keystone's position was that existing government economic and energy policy disposed of the issues raised by these intervenors. Keystone further argued that these parties were in the wrong forum; they should address their concerns to governments rather than the Board.

In determining the public interest, Keystone expressed the view that the Board should weigh the benefits and burdens of a project and that the Board must take into account the current economic and energy policies of the government in coming to its decision on the public interest.

With respect to the Informetrica Report, Keystone argued that 18,000 jobs is insignificant compared to the economic loss that would occur if the Project was not approved, or if it was delayed pending the construction of refining capacity in Canada. Keystone noted there would be insufficient pipeline capacity by 2009 and that even if a refinery was planned for at this time, it could not be on-stream until 2012 at the earliest. Keystone also suggested that if the application was denied, capacity apportionment would result in loss in value in Canada such that producers would stop developing extraction projects, upgraders would not get constructed, jobs would be lost and this would result in significant losses in royalty and tax revenues to governments.

Keystone claimed that one of the most attractive features of the Keystone pipeline was its ability to transport a range of products from heavy oil to synthetic crude oil, including the possibility of 100 percent upgraded products.

In response to claims by the CEP that a number of upgrading facilities currently planned for Canada would be abandoned if the Project were approved, Keystone argued there would be no growth in the upgrading industry without additional pipeline capacity. Also, since the pipeline could carry both segregated synthetic crude oil (SCO) and synbit, Keystone concluded that approval of the Project would have a positive impact on investment in upgrading facilities.

Keystone submitted it was significant that while the regulatory process provided interested parties with the opportunity to express their views, no opposition to the Project had been expressed by petroleum producers, potential shippers, representatives of the refining and upgrading industries, end-users of energy, or by governments of producing or consuming provinces.

Keystone argued that the benefits of the Project going ahead far outweigh any perceived benefits associated with its delay or denial. Keystone stated that the negative impacts of a delay would be tremendous since billions of dollars are being invested in upgrading facilities and upgraded product requires access to markets. Keystone also argued that the expected impact on Canadian crude oil due to insufficient pipeline capacity would be price discounting, shipping crude oil to less desirable markets, shutting-in of crude oil production or the slowing down of uncommitted oil sands projects.

Views of the Keystone Shippers Group (KSG)

The KSG supported Keystone's position in arguing that the Board should not attribute any probative value to the evidence filed by the CEP, the AFL and Parkland. If the Board was inclined to accord probative value to these intervenors' submissions, the KSG suggested that the probative value of Keystone's evidence so greatly outweighed that of these intervenors' that the Board should not even take it into account in its deliberations. The KSG's position was that these intervenors had done nothing more than raise questions and pose different views without providing any credible evidentiary support.

The KSG stressed the importance of the Project as it would provide incremental access for WCSB crude oil to reach markets in PADD II in a timeframe that would eliminate or minimize forecasted pipeline capacity constraints. The KSG indicated that its members, and others, have made significant investments that will require transportation capacity by 2009.

Similar to Keystone, the KSG argued that the consequence of insufficient access to markets for all WCSB crude oil would be pricing discounts, which would have significant negative impacts on the Canadian oil industry and the economy in general to the point where producers may stop developing projects or building upgraders. This would result in Canadian job loss in both the production and refining sectors as well as the loss of royalties and taxation benefits.

The KSG noted that a 69 200 m^3/d (435,000 b/d) increase in refining capacity would double the amount of oil currently refined in Alberta. The KSG indicated there was no evidence to support the assumption that the supply to western Canadian refining or petrochemical plants would be truncated as a result of the Keystone pipeline. It argued that this was demonstrated by the fact that no representatives of the refining or upgrading industries were present at the hearing to oppose the Keystone application.

The KSG argued that many of the underlying assumptions of the Informetrica Report were unrealistic. The Report did not consider what types of oil products are needed by the markets in Canada and the U.S. nor whether adequate markets exist in the U.S. for Canadian refined oil products. The KSG further noted that the Informetrica analysis was not evidence for the proposition that denial of the Project would create 18,000 jobs in Alberta.

The KSG also expressed the view that there was no evidence on the record to suggest that Canada's security of supply was at risk; in fact, the record was rife with evidence showing the opposite.

Views of the Canadian Association of Petroleum Producers (CAPP)

CAPP argued there was a need for the Keystone Project as there was tremendous growth in supply and that trapped supply is not in the public interest. It claimed there was a clear market need for the Project, as demonstrated by strong contractual support.

CAPP suggested that investment decisions concerning the Project were taking place within the framework of market-oriented government policies. Upgrading and refining capacity was increasing as expected in light of growing supply and in response to market forces. CAPP noted that it was unreasonable to expect all supply to be refined or upgraded in Canada. The Association also submitted that the types of protectionist arguments raised by the CEP and AFL regarding free trade had already been debated and decided by the signing of the NAFTA. It argued that Canada has already had painful experiences with restrictive energy policies and that it now affirms its commitment to market-oriented policies. In CAPP's view the market is working as expected and a decision to approve the Keystone pipeline would be in the public interest.

Views of the Board

The Board's decisions are governed by the NEB Act. Section 52 requires the Board to have regard to all considerations that appear relevant to it. In particular, subsection 52(e) provides that the Board may have regard to any public interest that in the Board's opinion may be affected by granting or refusing an application.

The Board has a very wide discretion in determining what to consider in coming to a decision under section 52 of the NEB Act. As the Board indicated in its discussion of the public interest in the MH-1-2006[6] Reasons for Decision, there is no precise definition of the concept. Rather, it may vary with the application, the location, the commodity involved, the various segments of the public affected by the decision and the purpose of the applicable section of the Act.

Therefore, the Board does not accept that the totality of the evidence presented by the CEP, the AFL and Parkland is irrelevant to the public interest determination it must make. The Board is of the view that the concerns expressed by the CEP, the AFL, Parkland and Dr. Laxer regarding potential impacts related to the export of non-upgraded oil on domestic industries, employment and security of supply are public interest considerations relevant to the disposition of this application.

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6 MH-1-2006, TransCanada PipeLines Limited and TransCanada Keystone Pipeline GP Ltd., Transfer Application, February 2007.

The Board's determination of the constituent elements of the public interest must necessarily vary based on the application before it. The Board found in the context of the MH-1-2006 proceeding that the types of issues raised by the CEP and AFL were not relevant as they were "matters of broad public policy that were properly within the purview of Federal and Provincial governments". However, that case specific determination does not limit the Board's determination of the scope of the public interest in this proceeding.

The Board is of the view that its consideration of the overall public interest must transcend the positions of individual parties as well as government expressions of current economic and energy policy. While the Board is informed by them, it is of the view that its decision on the public interest must balance overall competing political, economic and social interests.

As part of its regulatory framework, one of the Board's goals is that Canadians benefit from efficient energy infrastructure and markets. In order for markets to function properly, there must be adequate transportation capacity to connect supply to markets. The Board is of the view that well-functioning markets tend to produce outcomes that are in the public interest.

It was suggested by some intervenors that an opportunity to create Canadian jobs would be lost if the Keystone pipeline exported unrefined product. The Informetrica Report provided an estimate of the number of jobs that could be created if the Canadian refining industry was expanded to process an additional 63 600 m^3/d (400,000 b/d) of crude oil. The Board notes that the evidence does not, however, support the proposition that an expansion of the Canadian refining industry would necessarily result from a denial of this application. This is a decision that is normally made by the market.

The Board also finds the argument that approval of the Keystone pipeline may frustrate the development and growth of the domestic upgrading and refining industry by causing a lack of available oil and gas supply to be unpersuasive. The western Canadian crude oil production forecasts presented in this hearing was estimated at 468 000 m^3/d (2,944,000 b/d) by 2010. These forecasts were not challenged. In contrast, the capacity of the Keystone pipeline would be 69 200 m^3/d (435,000 b/d). The evidence demonstrates that projected supply will far exceed takeaway capacity offered by the Project. The Board accepts the evidence that the Keystone pipeline would provide producers in western Canada with takeaway capacity to accommodate projected growth in oil sands production in a timeframe that would eliminate or reduce the forecasted capacity constraints. The Board recognizes the adverse economic impacts that could be expected to arise from inadequate pipeline takeaway capacity. Given the capacity of the proposed pipeline in relation to the expected

production, the Board concludes that Canadian requirements for crude oil would continue to be met if the Keystone pipeline were built and carried the range of oil throughputs indicated in the application.

The Board finds it significant that current feedstock users did not participate in the hearing. Furthermore, the Board notes that shippers who signed long-term firm transportation contracts on the Keystone pipeline accepted a significant level of business risk. This is further evidence that market participants have confidence that the market is working and could be expected to continue to work to meet long-term requirements for Canadian crude oil.

Some intervenors suggested that the operation of the NAFTA and the existence of export orders may have negative consequences for security of supply that warrant a finding by the Board that the Project is not in the public interest. The Board is not persuaded by arguments that the Project should be denied because of the effect NAFTA may have or because shippers are not required to apply for long-term oil export licences. The Board is bound by legislation. Part VI of the NEB Act sets out the framework for export approvals and requires the Board to give effect to NAFTA. The Board is of the view that the approval of the pipeline and the consequent exports it will facilitate will not put Canadian security of supply at risk.

The Board notes that certain intervenors sought more detailed information on the products to be shipped and the specific end-uses of market demand. The Board is of the view that this detailed information is not necessary for its decision making. The Board is satisfied that the Keystone pipeline is flexible enough to meet a range of market requirements, including the possibility of transporting upgraded products. This flexibility should contribute to efficiency of the market and improved economic outcomes for Canadians.

Based on the evidence in this proceeding, the Board does not accept that approval of the application will have an adverse impact on Canadians. The existence of adequate pipeline capacity would enable the operation of the market and could stimulate investment, including investment by participants seeking to develop domestic upgrading and refining facilities. In the circumstances of this case, the Board does not believe that denying the Project strictly for the purpose of restricting bitumen exports to make them available as feedstock for potential domestic upgrading projects, that may or may not be realized, would serve the Canadian public interest. Such regulatory intervention would likely introduce uncertainty in the market that could negatively impact investment decisions and the availability of bitumen for both domestic and export markets. The Board concludes that there is no compelling reason in this case to interfere in what the Board believes to be a well functioning market by denying or delaying the Keystone application.

Chapter 10

Conclusion and Disposition

In making its decision, the Board must weigh the various benefits of the project against its various burdens and come to a conclusion about whether there is an overall benefit, detriment or lack of effect on the public interest.

The Board has weighed the evidence projecting benefits of the Project against the evidence projecting detriments and finds that the advantages of approving the Project outweigh its potential burdens. The Board therefore concludes that approval of the Project is in the public interest and that the applied for facilities will be required for the present and future public convenience and necessity.

The Board has also evaluated the Applicant's proposed toll methodology and tariff in accordance with the statutory standard described in Part IV of the NEB Act and finds it to be just and reasonable and not unjustly discriminatory. In addition, the Board finds that Keystone's common carrier status has been maintained and has designated Keystone as a Group 2 company. As set out in Chapter 3, Keystone is subject to certain requirements with respect to tolls filings and is required to file an amended tariff to include terms and conditions of access.

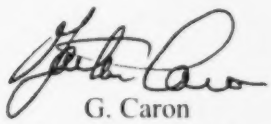
In February 2007, the Board released its Reasons for Decision pertaining to the MH-1-2006 hearing and Order MO-02-2007. The Order authorized TransCanada Pipelines Limited and Keystone, to respectively sell pursuant to paragraph 74(1)(a) of the NEB Act and purchase pursuant to paragraph 74(1)(b), the facilities described in Schedule A of the Order (Transferred Facilities). The Order also authorized, pursuant to section 59 of the NEB Act, TransCanada to reduce its Mainline rate base by the net book value of the Transferred Facilities on the date of the transfer and for Keystone to include the net book value in the rate base of the Oil Plant in Service if the Keystone pipeline is placed in service.

The Board noted in its MH-1-2006 Reasons for Decision that the approval had no effect unless further regulatory approvals, including approvals under section 52 and section 21, were later granted. This was the result of the Applicants' choice to apply for authorizations in a stepwise process, the merits of which were discussed extensively in the context of that hearing.

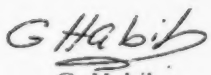
While Order MO-02-2007 was not issued conditionally, the Keystone project could not proceed until further Board authorizations were granted and sanctioned by the Governor in Council, as necessary. With these Reasons for Decision the Board has determined, subject to the approval of the Governor in Council, to issue a certificate in respect of the applied-for pipeline granting approvals under section 52 of the NEB Act and under section 43 of the *Onshore Pipeline Regulations, 1999*.

Following the granting of these approvals, the Board expects that TransCanada will file with it forthwith, upon completion of the transfer of the facilities authorized by MO-02-2007, an application pursuant to subsection 21(2) of the NEB Act for an Order to vary Board Certificate of Public Convenience and Necessity No. GC-1, issued to TransCanada on 11 April 1960.

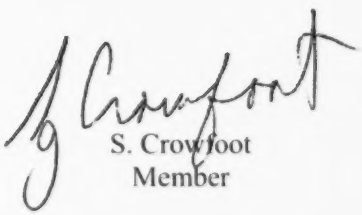
The foregoing constitutes our Reasons for Decision in respect of the application considered by the Board in the OH-1-2007 proceeding.



G. Caron
Presiding Member



G. Habib
Member



S. Crowfoot
Member

Calgary, Alberta
September 2007

Appendix I

List of Issues

1. The need for the proposed project.

2. The economic feasibility of the proposed project.

3. The potential commercial impacts of the proposed project.

4. The reasonableness of the open season process and the appropriateness of contracted capacity on the oil pipeline.

5. The potential environmental and socio-economic effects of the proposed new, modified and converted facilities, including those factors outlined in subsection 16(1) of the *Canadian Environmental Assessment Act*.

6. The appropriateness of the general route of the pipeline.

7. The appropriateness of the proposed tolling methodology and the method of toll and tariff regulation, including the proposal that the Keystone Pipeline be regulated on a complaint basis.

8. The suitability of the design, construction and operation of the proposed new, modified and converted facilities.

9. The terms and conditions to be included in any approval the Board may issue.

Appendix II

NEB Ruling on the Motion by the CEP, Parkland, the AFL and Dr. Laxer

National Energy Board  Office national de l'énergie

File OF-Fac-Oil-T241-2006-01 02
17 May 2007

Mr. Steven Shrybman
Sack Goldblatt Mitchell
Suite 500, 30 Metcalfe Street
Ottawa, ON K1P 5L4
Facsimile 613-235-3041

Dear Mr. Shrybman:

TransCanada Keystone Pipeline GP Ltd. (Keystone)
Application for Construction and Operation of Keystone Pipeline
Hearing Order OH-1-2007
Ruling on Notice of Motion by Communications, Energy and Paperworkers Union of Canada, The Parkland Institute, The Alberta Federation of Labour and Dr. Gordon Laxer (Moving Parties)

On 15 May 2007, the Moving Parties filed a Notice of Motion pursuant to section 35 of the Board's Rules of Practice and Procedure and subsections 12(1), 15(1) and (3) of the *National Energy Board Act* (Act) for orders:

- adjourning the present hearings until an adequate evidentiary record is assembled that assesses the extent to which the Keystone Pipeline Project may inhibit the development or viability of Canadian refining and chemical industries;
- authorizing, pursuant to s. 15 of the Act, one or more Members to make a report to the Board on certain matters which have arisen in this hearing; and
- such other order as the Board may consider just or appropriate.

The Moving Parties submit that the issues they raise in connection with environmental, economic and social impacts of exporting raw bitumen for value-added processing in the United States and concerns relating to security of supply for Eastern Canada are central to the public interest determination that the Board is being called upon to make. They submit that it is unreasonable to expect them to provide further evidence on these matters as they have limited access to proprietary information, including information in the Applicant's possession, and in light of the fact that they lack the necessary resources and expertise.

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Views of the Board

Although the motion refers to substantive issues the Board may consider in arriving at its ultimate decision in this proceeding, it is in fact a request for procedural relief.

Parties to Board proceedings are responsible for filing for the record information they deem material. The Board notes that parties to this proceeding have been afforded and exercised opportunities to file evidence and to test the evidence of others through information requests. Parties will also have a further option at the Hearing to cross-examine witnesses tendered by intervenors with contrary views.

The Board will make a decision in this matter, based on the record that will be before it. This being said, it will be open to parties to take the position in argument at the end of the hearing that the Board does not have sufficient evidence to be able to make a determination on any or all aspects of the application. Accordingly, the Board denies the request to adjourn the hearing for the purpose of augmenting the evidentiary record.

The Board also declines the Moving Parties' request to authorize one of its Members to take evidence to assess the potential adverse impacts of the Keystone Project. The Board is of the view that the proceeding it has initiated pursuant to Hearing Order OH-1-2007 is the most appropriate, efficient and effective forum to hear the relevant evidence.

Having denied the Motion, no changes to the procedural schedule are required.

Yours truly,

David Young
Acting Secretary

cc: All Parties to Hearing Order OH-1-2007

Appendix III

NEB Ruling on the Motion by the CEP and the AFL

Decision on Motion
Chairman

--- Upon commencing at 8:29 a.m. L'audience débute à 8h29

620. **THE CHAIRMAN:** Good morning everyone. Bonjour à tous.

621. The Board would like to first communicate its decision on the motion.

622. On the 28th of May 2007, the CEP and AFL filed a written motion with the Board seeking two orders pursuant to section 11 of the *National Energy Board Act* and section 40 of the Rules of Practice and Procedure.

623. The first requested order was for a subpoena to be issued for representatives of the Keystone Shippers Group to attend and answer questions described in paragraph 20 of the motion materials. The second was for an order that the Applicant disclosed the identity of the companies who have entered into term contracts for use of the Keystone Pipeline and the nature and quantities of products that would be shipped.

624. In addition to the moving parties, on 4th of June 2007, the Board heard from the Keystone Shippers Group, CAPP and the Applicant orally on the motion.

625. Without reiterating the moving parties' submissions, at the heart of the motion was the assertion that the information sought was needed to allow CEP and AFL an opportunity to present their case to the Board and to allow the Board to determine whether the Keystone project is in the public interest.

626. Section 11 of the *National Energy Board Act* and section 40 of the Rules of Practice and Procedure empower the Board to issue subpoenas. The Board takes the view that this is a discretionary power which must be exercised carefully and accordingly that the subpoena should be issued only where the information sought is relevant and necessary to the Board satisfying its mandate.

627. In this case, the Board is not persuaded that the evidence the moving parties seek to obtain by subpoena is necessary in order for the Board to fulfill its mandate. There is already information on the public record with respect to the supply, markets and products to be transported by the Keystone Pipeline.

628. For example, section 3 of the Keystone Pipeline application and Purvin & Gertz Inc.'s supply and market outlook for the Keystone Pipeline project in Appendix 3-1 provide the origin and the intended markets of the products to be transported by the proposed pipeline. Furthermore, the pro forma transportation services agreement and tariff in section 5 of the application provide evidence regarding the range of products that might be transported by the Keystone Pipeline.

629. The Board recognizes that some of the information requested by the moving parties in paragraph 20 is not on the record. To the extent that this information has not already been provided or is not as detailed as requested, it is unnecessary for the Board to satisfy its mandate.

630. While the Board is sensitive to the requirements of natural justice and the need to allow parties an opportunity to present their case, the Board is of the view that there is sufficient information on the record to allow the moving parties to conduct their cross-examination and make their arguments without the degree of detail they are seeking.

631. In addition, it would remain open to parties to take the position that Keystone has not discharged its burden of proof and that the application should ultimately be denied. For these reasons, the Board is satisfied that the hearing will be fair for all parties.

632. The Board also denies the moving parties' second request for an order requiring Keystone to disclose the identity of the committed shippers and the nature and quantities of the oil goods to which the contracts pertain. For the reasons noted above with respect to the subpoena request, the Board is of the view that this evidence would not assist it with the determination it is being called upon to make.

633. Having concluded that the Board will not order Keystone to disclose the requested information, the matter of confidentiality under section 16.1 of the *National Energy Board Act* does not arise. Accordingly, the CEP's and AFL's requests pursuant to the *National Energy Board Act* and the Rules of Practice and Procedure are denied.

634. This is the Board's ruling on the motion.

635. Are there any preliminary matters this morning?

636. Ms. Chahley ...?

637. **MS. CHAHLEY:** Mr. Chairman, Members of the Panel, I have for you to file the Opening Statement that we will be presenting on behalf of the Federation of Labour, Mr. McGowan.. I provided copies to your staff and to the clerk and we will be filing it online this morning from my office in Edmonton. If I might file that and have an exhibit number, please?

638. **THE REGULATORY OFFICER:** That will be Exhibit C-23-7:
Pièce C-23-7.

Appendix IV

NEB Ruling on the Motion by the CEP

National Energy Board  Office national de l'énergie

File OF-Fac-Oil-T241-2006-01 02
5 July 2007

Mr. Steven Shrybman
Sack, Goldblatt, Mitchell LLP
30 Metcalfe Street
Suite 500
Ottawa, ON K1P 5L4
Facsimile 613-230-5801

Dear Mr. Shrybman:

TransCanada Keystone Pipeline GP Ltd. (Keystone)
Keystone Pipeline Application
Hearing Order OH-1-2007
Sur-Reply Submissions of the Communications, Energy and Paperworkers Union of Canada (CEP)

The Board is in receipt of the motion to file sur-reply argument of the CEP dated 29 June 2007. The motion alleges that Keystone's reply argument misrepresented CEP evidence and submissions, introduced errors to the record and claimed CEP fabricated evidence in its argument. CEP submits that sur-reply should be permitted to address these matters. The Board has also received a letter dated 3 July 2007, in support of the CEP motion, from the Alberta Federation of Labour.

The Board is of the view that leave to file sur-reply should be granted rarely and only in circumstances where an applicant raises a new issue in reply which an intervenor has not had an opportunity to address. In this case, the Board is not persuaded that Keystone's reply argument raised any new issue to which CEP must, as a matter of fairness, be permitted to respond.

Further, the Board has heard the submissions and evidence of all parties and will draw its own conclusion as to whether the submissions and evidence have been properly characterized by counsel. Additional argument on these points is of no assistance.

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Accordingly, the Board has decided to deny the CEP motion and will not consider the sur-reply in its deliberations. The Board will allow the covering letter and notice of motion, paragraphs one through five, to form part of the record for this proceeding.

Yours truly,

David Young
Acting Secretary

cc: Mr. Kemm Yates, Q.C., Stikeman Elliott LLP, facsimile 403-266-9034
Ms. Leanne Chahley, Blair Chahley Severny, facsimile 780-425-6448

Appendix V

Certificate Conditions

In these conditions, the expression 'commencement of construction' means: clearing of vegetation, ground-breaking and other forms of right-of-way preparation that may have an impact on the environment, but does not include activities associated with normal surveying operations.

General

1. Keystone shall cause the approved Project to be designed, located, constructed, installed, and operated in accordance with the specifications, standards and other information referred to in its application or as otherwise agreed to during questioning in the OH-1-2007 proceeding or in its related submissions.

2. Keystone shall implement or cause to be implemented all of the policies, practices, programs, mitigation measures, recommendations and procedures for the protection of the environment included in or referred to in its application or as otherwise agreed to during questioning in the OH-1-2007 proceeding or in its related submissions.

3. Keystone shall file with the Board, at least 30 days prior to any actions or modifications related to Line 100-1, a table which tracks all commitments related to the Line 100-1 Change of Service resulting from the:

   (a) application and subsequent filings;

   (b) undertakings made during the OH-1-2007 proceeding; and

   (c) approval conditions.

   Keystone shall also file monthly status updates of the table until the final leave to open is granted by the Board.

4. (a) Keystone shall engage an independent third party to qualify the in-line inspection of Line 100-1 in gas service. The qualification process shall be analogous to the requirements set forth in American Petroleum Institute Standard 1163.

   (b) The scope of the third party activities and deliverables shall be determined by the Board. Keystone shall advise the Board, at least 30 days in advance, when it requires the scope of the third party activities and deliverables.

   (c) Keystone shall select the third party from the following list, or provide an alternative party to the Board for approval:
      i) Det Norske Veritas
      ii) Lloyd's Register

iii) ABS Consulting
iv) Germanischer Lloyd

(d) Keystone shall file with the Board, at least 90 days prior to submission of its first leave to open application, the final report of the third party reviewer.

5. (a) Keystone shall engage an independent third party to perform an independent verification of an updated engineering assessment of Line 100-1.

(b) The scope of the third party activities and deliverables shall be determined by the Board. Keystone shall advise the Board, at least 30 days in advance, when it requires the scope of the third party activities and deliverables.

(c) Keystone shall select the third party from the following list, or provide an alternative party to the Board for approval:
i) Det Norske Veritas
ii) Lloyd's Register
iii) ABS Consulting
iv) Germanischer Lloyd

(d) Keystone shall file with the Board for approval, at least 60 days prior to commencing line fill, the final engineering assessment that determines Line 100-1 is suitable for liquid service.

(e) Keystone shall file with the Board, at least 60 days prior to commencing line fill, the final report of the third party reviewer on the engineering assessment.

(f) In addition to CSA Z662-07 requirements, the engineering assessment shall consider:
i) the findings of performance testing conducted to ascertain the dynamic response of the pipe materials to fatigue loading representative of the pressure spectrum anticipated in liquid service. Testing shall incorporate the materials of all manufacturers present on Line 100-1;
ii) the line fill plan; and
iii) the third party final report.

6. Keystone shall maintain at its construction office(s):

(a) an updated Environmental Tracking Commitments Table listing all regulatory commitments, including but not limited to all commitments resulting from:

i) the NEB application and subsequent filings;

ii) undertakings made during the OH-1-2007 proceeding; and

iii) conditions from permits authorizations and approvals.

(b) copies of any permits approvals or authorizations for the applied-for facilities issued by federal, provincial or other permitting agencies, which include environmental conditions or site-specific mitigative or monitoring measures; and

(c) any subsequent variances to any permits, approvals or authorizations.

7. The facility to be constructed and operated pursuant to this Certificate shall be owned by TransCanada Keystone Pipeline GP Ltd., as the general partner acting on behalf of the TransCanada Keystone Pipeline Limited Partnership, and operated by TransCanada PipeLines Limited.

Prior to the Commencement of Construction

8. Keystone shall file with the Board for approval, at least 60 days prior to the commencement of construction, an updated, Project-specific Environmental Protection Plan (EPP). The EPP shall be a comprehensive compilation of all environmental protection procedures, mitigation measures, fish and wildlife restricted activity periods and monitoring commitments, as set out in Keystone's application for the Project, subsequent filings or as otherwise agreed to during questioning in the OH-1-2007 proceeding or in its related submissions. The EPP shall also include the results of additional studies conducted in 2007, updated Environmental Alignment Sheets and Watercourse Data Sheets. Construction shall not commence until Keystone has received approval of its EPP.

9. Keystone shall file with the Board for approval, at least 45 days prior to commencement of construction, a Native Range Management Plan that includes a Follow-up Program for the protection and reclamation of native range. It shall include:

(a) on a map or Environmental Alignment Sheets, the locations where native range management and follow-up would be applied;

(b) the measures to be applied, and an assessment of the anticipated effectiveness of the proposed mitigation and reclamation strategy;

(c) the schedule for implementing the measures as set out in the above;

(d) evidence demonstrating that Environment Canada, Canadian Wildlife Service, and Alberta Sustainable Resource Development have reviewed and commented on the Program;

(e) the results, evaluation and recommendations for managing native range;

(f) the schedule Keystone shall implement to address any unresolved concerns; and

(g) a schedule for filing follow-up reports for native range management reports with the Board.

10. Keystone shall file with the Board, at least 30 days prior to the commencement of construction of the approved facilities, a Construction Safety Manual.

11. Keystone shall file with the Board at least 14 days prior to the commencement of construction of the approved facilities, Keystone's final Pipeline Construction Specifications.

12. Keystone shall file with the Board, at least 14 days prior to the commencement of construction of the approved facilities, a detailed construction schedule or schedules identifying major construction activities and shall notify the Board of any modifications to the schedule or schedules as they occur. Keystone shall file construction progress reports on a monthly basis until completion. The report shall include an updated construction schedule identifying major construction activities, information on activities carried out during the reporting period, any environmental and safety issues and non-compliances, and measures undertaken for the resolution of each issue and non-compliance.

13. Keystone shall file with the Board, at least 14 days prior to joining, its field joining program.

14. Keystone shall file with the Board, at least 30 days prior to pressure testing, a pressure testing program for each of the following:

    (a) New pipeline segments;

    (b) Pump stations; and

    (c) Tanks.

15. Keystone shall file with the Board, at least 30 days prior to pressure testing, an emergency response plan for pressure testing activities, including response to a pressure test failure, for each of the following:

    (a) New pipeline segments;

    (b) Pump stations; and

    (c) Tanks.

16. Keystone shall file with the Board, at least 30 days prior to commencement of construction:

    (a) the comments and recommendations received from the provincial authorities in Saskatchewan and Manitoba regarding the Heritage Resources Impact Assessment; and

    (b) for approval, the mitigation measures Keystone proposes to address the comments and recommendations in (a).

17. Keystone shall file any watercourse compensation plan required by Fisheries and Oceans Canada for the Project with the Board, at least 14 days prior to the planned start of excavation at watercourses identified in the plan.

18. Keystone shall file with the Board prior to commencement of construction, evidence to confirm that Environment Canada, Canadian Wildlife Service and Alberta Sustainable Resource Development have reviewed and commented on the proposed methods for mitigating the effects of construction and operation of the pipeline on *Species at Risk Act* listed amphibian species.

19. Keystone shall file with the Board prior to commencement of construction, confirmation that Environment Canada, Canadian Wildlife Service (for federal lands), and Alberta Sustainable Resource Development (for Crown lands crossed in Alberta), have reviewed and accepted the proposed seed mixes to be used for the reclamation of the Project, and confirmation that these seed mixes have been obtained.

During Construction

20. In the event of clearing within restricted activity periods for migratory birds, Keystone shall retain a qualified avian biologist to carry out a survey to identify any migratory birds and nests. The spatial boundaries of the survey for the Project will include at least 30 m beyond the disturbance footprint for migratory birds and 100 m beyond the disturbance footprint for raptors. Keystone shall file with the Board:

    (a) evidence to confirm that Environment Canada and Canadian Wildlife Service have reviewed and commented on the proposed methods for the survey;

    (b) the results of the survey;

    (c) mitigation strategies, including monitoring, developed in consultation with Environment Canada and Canadian Wildlife Service to protect any identified migratory birds or their nests; and

    (d) mitigation, including monitoring, developed in consultation with Environment Canada and Canadian Wildlife Service to protect any identified migratory *Species at Risk Act* birds or their nests.

21. Keystone shall:

    (a) notify the Board in writing of any change from the proposed HDD watercourse crossing methods including those undertaken to comply with CSA Z662-07, and the reasons for that change prior to implementation;

    (b) provide copies of all correspondence from regulatory authorities relating to the changed crossing method; and

(c) file for approval, within 30 days of implementing the changed watercourse crossing method, a description of amended reclamation and re-vegetation measures for the affected watercourse crossings.

22. Keystone shall, during construction, maintain for audit purposes at each construction site:

(a) a copy of the welding procedures;

(b) the non-destructive testing procedures used on the Project; and

(c) all supporting documentation related to non-destructive testing.

23. Keystone shall notify the Board 14 days prior to the commencement of excavation of any watercourse crossing that has been assessed for fish and fish habitat.

24. Keystone shall preserve the riparian vegetation during construction and operation of the pipeline for each of the watercourses listed by KP and name: Boyne River 1174.25, 1174.35, 1174.39; Shannon Creek 1201.25; Deadhorse Creek 1205.1; Unnamed 1217.4; Unnamed 1219.73; and Buffalo Creek 1232.86.

25. Keystone shall file with the Board, at least 14 days prior to HDD activities at the Red Deer River, South Saskatchewan River and Boyne River and any additional locations where HDD may take place, a drill execution plan specific to each crossing. Guidance for execution plans can be found in CAPP Publication 2004-0022, "Planning Horizontal Directional Drilling for Pipeline Construction". The execution plans shall consider the following:

(a) use of drill bit detecting and tracking equipment to confirm the drill path;

(b) workspace requirements for equipment at entry and exit points;

(c) workspace requirements to construct and layout the pipe drag section;

(d) drilling mud and water requirements;

(e) environmental protection and monitoring plan;

(f) drilling fluid management plans;

(g) spill or fluid loss contingency, response, cleanup and mitigation plans;

(h) equipment specifications, condition, and integrity; and

(i) mitigation of potential detrimental effects of geological formations.

Prior to Submission of First Application for Leave to Open

26. Keystone shall file with the Board, at least 120 days prior to submission of its first leave to open application, an Emergency Procedures Manual for the Project facilities which will include a table with: valve chainage and GPS locations; leak and rupture information; and environmental features. Keystone shall notify the Board of any modifications to the manual as they occur. In preparing its Emergency Procedures Manual, Keystone shall refer to the Board's *Onshore Pipeline Regulations, 1999* and the corresponding Guidance Notes.

27. Keystone shall file with the Board, at least 120 days prior to submission of its first leave to open application, in conjunction with Keystone's Emergency Procedures Manual, the liaison program for the Project facilities. In preparing the liaison program, Keystone shall refer to sections 33 and 34 of the Board's *Onshore Pipeline Regulations, 1999* and the corresponding Guidance Notes.

28. Keystone shall file with the Board, at least 120 days prior to submission of its first leave to open application, in conjunction with Keystone's Emergency Procedures Manual, the continuing education program for the Project facilities. In preparing the continuing education program, Keystone shall refer to section 35 of the Board's *Onshore Pipeline Regulations, 1999* and the corresponding Guidance Notes.

29. Keystone shall conduct, at least 60 days prior to submission of its first leave to open application and in the appropriate season, boom deployment and ice cutting drill exercises. Keystone shall notify the Board 30 days prior to the drill exercises, of the date and location of the drill.

30. Keystone shall file with the Board, at least 60 days prior to submission of its first leave to open application, a copy of the integrity management program for the facilities of the Project. In preparing the integrity management program, Keystone shall refer to section 40 of the Board's *Onshore Pipeline Regulations, 1999* and the corresponding Guidance Notes.

31. Keystone shall file with the Board, at least 14 days prior to submission of its first leave to open application, a confirmation letter signed by an officer of the Company that lists all liquid related operating procedures, including emergency procedures, that have been developed and confirms that affected personnel have been trained in these operating procedures. The filing required by this condition shall include a statement confirming that the signatory to the filing is an officer of the Company.

Post Construction

32. Keystone shall file with the Board, 6 months after the commencement of operation, and on or before the 31st January for each of the subsequent 5 years, a post-construction environmental monitoring report that:

    (a) provides a summary of the effectiveness of the environmental mitigation measures applied during construction;

(b) identifies deviations from plans and alternate mitigation applied as approved by the Board;

(c) identifies locations on a map or diagram where corrective action was taken during construction and the current status of corrective actions;

(d) provides proposed measures and the schedule Keystone shall implement to address any unresolved concerns; and

(e) evaluates the success of:

i) re-vegetation as measured against a 85 percent survival rate of recommended plantings;

ii) non-native plant vegetation management.

33. Keystone shall file with the Board for approval, at least 30 days prior to the planned start of operation, a project specific Environmental Protection Program for the operation and maintenance of the pipeline pursuant to section 48 of the *Onshore Pipeline Regulations, 1999*. The Program shall include practices and procedures for:

(a) ongoing environmental training for employees;

(b) the handling and disposal of all wastes associated with the operation and maintenance of the pipeline;

(c) vegetation management;

(d) erosion control on the right-of-way;

(e) the management of air and noise emissions;

(f) soil conservation;

(g) travel on the right-of-way; and

(h) environmental monitoring and surveillance of the right-of-way.

34. Keystone shall file with the Board, at least 30 days prior to the commencement of operations, Keystone's Project-specific internal standards and practices for the protection of the environment referenced in its application and related submissions in the OH-1-2007 proceeding.

35. Keystone shall file with the Board, within 30 days following issuance of the Order for leave to open, a confirmation by an officer of the Company, that the approved Project was completed and constructed in compliance with all applicable conditions in this Certificate. If compliance with any of these conditions cannot be confirmed, the officer of the Company shall file with the Board details as to why compliance cannot be

confirmed. The filing required by this condition shall include a statement confirming that the signatory to the filing is an officer of the Company.

36. Keystone shall conduct line patrolling (aerial or ground) of Line 100-1 once a week during the first year of operation.

37. Keystone shall report to the Board all reportable commodity pipeline accidents and incidents on Line 100-1, as defined by section 2 of the *Transportation Safety Board Regulations*, during the first year of operation.

Expiration of Certificate

38. Unless the Board otherwise directs prior to 31 December 2008, this Certificate shall expire on 31 December 2008 unless construction in respect of the facilities has commenced by that date.

Appendix VI

Scope of the Environmental Assessment

TransCanada Keystone Pipeline GP Ltd. (Keystone)
Proposed Keystone Pipeline Project
Scope of the Environmental Assessment Pursuant to the
Canadian Environmental Assessment Act

1.0 INTRODUCTION

The Canadian portion of the Keystone Pipeline Project (the Project) is a proposed crude oil pipeline extending from Hardisty, Alberta to a point near Haskett, Manitoba. The Project involves the conversion to oil transmission service of 864 km of existing natural gas pipeline and the construction of 371 km of new oil pipeline. The Project also includes the construction and operation of pipeline operational tanks, pump stations and other related physical works and activities.

The Project would be constructed, owned, and operated by TransCanada Keystone Pipeline GP Ltd. (Keystone). Keystone is a wholly-owned subsidiary of TransCanada PipeLines Limited (TransCanada).

Keystone filed an application with the National Energy Board on 12 December 2006 for permission to construct and operate the Canadian portion of the Project. The Board released a Hearing Order regarding the application on 29 January 2007. A Certificate of Public Convenience and Necessity to construct and operate the project pursuant to section 52 of the *NEB Act* would be required and the project is subject to an environmental screening under the *Canadian Environmental Assessment Act* (CEA Act).

On 10 July 2006, Keystone filed a Preliminary Information Package with the National Energy Board. The intent of the PIP was to initiate the environmental assessment (EA) process pursuant to the CEA Act. The following departments subsequently identified themselves as having responsibilities or an interest under the CEA Act in the environmental assessment of the proposed Keystone project:

- National Energy Board – Responsible Authority (approval role under section 5 of the CEA Act (RA))
- Department of Fisheries and Oceans – RA and Federal Authority (in possession of specialist or expert information or knowledge (FA)). See cover letter attached to this scope.
- Transport Canada, Navigable Waters – RA
- Indian and Northern Affairs Canada – RA
- Environment Canada - FA
- Health Canada – FA
- Natural Resouces Canada - FA
- Canadian Transportation Agency - FA

The Provinces of Alberta, Manitoba, and Saskatchewan also expressed an interest in monitoring and participating in the EA coordination process although Provincial EA legislation is not triggered.

The scope of the EA was established in accordance with the CEA Act and the CEA Act *Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements* which state that the RAs shall establish the scope of the EA after consulting with FAs. The Provinces of Alberta, Manitoba, and Saskatchewan also reviewed the draft scope.

2.0 SCOPE OF THE ASSESSMENT

2.1 Scope of the Project

The scope of the Project as determined for the purposes of the environmental assessment includes the various components of the Project as described by Keystone in its 12 December 2006 application, submitted to the National Energy Board.

The Project has two distinct components:
- construction of new pipeline and other related facilities; and
- utilization and conversion of existing pipeline facilities.

The scope of the Project includes construction, operation, maintenance and foreseeable changes, and where relevant, the abandonment, decommissioning and rehabilitation of sites relating to the entire Project, and specifically, the following physical works and activities:

New Facilities

- 3 pipeline operational tanks, each having a capacity of approximately 55 600 m^3 (350,000 bbl) and associated piping at Hardisty, Alberta.
- 268 km of 760 mm (NPS 30) pipeline from Hardisty, Alberta to near Burstall, Saskatchewan and 3 km of 760 mm (NPS 30) pipeline near Burstall, Saskatchewan.
- 10 km of 864 mm (NPS 34) pipeline from TransCanada's existing Mainline Carman Sales Tap to a point near Elm Creek, Manitoba.
- 90 km of 762 mm (NPS 30) pipeline from north of Elm Creek, Manitoba to the U.S. border.
- an initiating pump station located at Hardisty, Alberta and four additional pump stations at kilometer post (KP) 49, 104, 162, and 231 in Alberta.
- 2 pump stations at KP 1165 and 1228 in Manitoba.
- mainline valves, block valves, and meter stations spaced at intervals along the pipeline.
- a pipeline internal inspection launcher located at Hardisty and a receiver located near the TransCanada Mainline Burstall compressor station.
- a pipeline internal inspection launcher and receiver facility located at the junction of the NPS 34 and NPS 30 pipeline segments in Manitoba.
- a cathodic protection system, including the construction of anode beds, installed for the pipeline, operational tanks and pump stations.
- a pressure control station located at the end of the new pipeline to provide overpressure protection for the allowable operating pressure of the existing pipeline.
- Supervisory Control and Data Acquisition (SCADA) system linking facilities to control centers.
- communications system and power supply to service pump stations, meter stations, valve sites, and other pipeline facilities.
- various temporary construction workspace, access roads, work camps, if required, and equipment laydown areas.

Utilization and Conversion of Existing Facilities

- 864 km of TransCanada's existing Mainline Line 100-1 natural gas pipeline located in Saskatchewan and Manitoba, 612 km and 252 km in each province respectively, modified to transport crude oil.

- the removal or modification of existing natural gas pipeline facilities not required for the Project (e.g. mainline drips, tie-over piping, sales, receipt and metering facilities).
- mainline valves spaced at intervals along the pipeline to facilitate operational activities.
- 9 new pump stations on the converted pipeline facilities for oil transmission service located at KP 361, 461, 564, 669, 721, 775, and 880 in Saskatchewan and KP 988 and 1097 in Manitoba.
- communications system and power supply to service pump stations, meter stations, valve sites and other pipeline facilities.
- various temporary construction workspace, access roads, work camps, if required, and equipment laydown areas.

It should be noted that any additional modifications or decommissioning/abandonment activities would be subject to future examination under the NEB Act and consequently, under the CEA Act, as appropriate. Therefore, at this time, these activities will be examined in a broad context only.

2.2 Factors to be Considered

The environmental assessment will include a consideration of the following factors listed in paragraphs 16(1)(a) to (d) of the CEA Act:

> 1. the environmental effects of the Project, including the environmental effects of malfunctions or accidents that may occur in connection with the Project and any cumulative environmental effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out;
> 2. the significance of the effects referred to in paragraph 1;
> 3. comments from the public that are received during the environmental assessment process; and
> 4. measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project.

In addition, pursuant to paragraph 16(1)(e), the environmental assessment will consider alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means.

For further clarity, subsection 2(1) of the CEA Act defines 'environmental effect' as:

> "environmental effect" means , in respect of a project,
> a) any change that the project may cause in the environment, including any change that the project may cause to a listed wildlife species, its critical habitat or the residences of individuals of that species as defined in the *Species at Risk Act*,
> b) any effect of any change referred to in paragraph (a) on
> i. health and socio-economic conditions,
> ii. physical and cultural heritage,
> iii. the current use of lands and resources for traditional purposes by aboriginal persons,
> iv. any structure, site or thing that is of historical, paleontological, or architectural significance; or
> c) any change to the project that may be caused by the environment,
> whether any such change or effect occurs within or outside Canada.

2.3 Scope of Factors to be Considered

The environmental assessment will consider the potential effects of the proposed Project within spatial and temporal boundaries within which the Project may potentially interact with, and have an effect on components of the environment. These boundaries will vary with the issues and factors considered, and will include:

- construction, operation, decommissioning, site rehabilitation and abandonment or other undertakings that are proposed by the Proponent or that are likely to be carried out in relation to the physical works proposed by the Proponent, including mitigation and habitat replacement measures.
- the natural variation of a population or ecological component.
- the timing of sensitive life cycle phases of wildlife species in relation to the scheduling of the Project.
- the time required for an effect to become evident.
- the time required for a population or ecological component to recover from an effect and return to a pre-effect condition, including the estimated degree of recovery.
- the area affected by the Project.
- the area within which a population or ecological component functions and within which a Project effect may be felt.

For the purpose of the assessment of the cumulative environmental effects, the consideration of other projects or activities that have been or will be carried out will include those for which formal plans or applications have been made.

Appendix VII

Environmental Screening Report

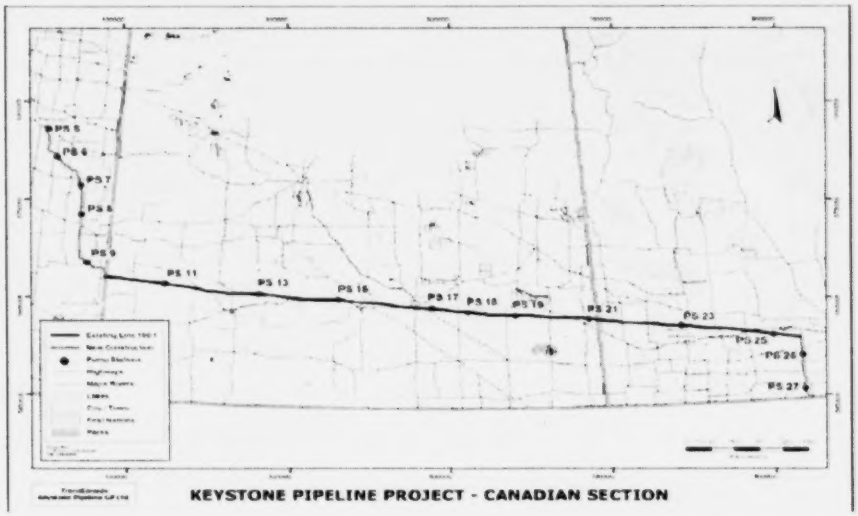
National Energy Board | Office national de l'énergie

ENVIRONMENTAL SCREENING REPORT

Pursuant to the *Canadian Environmental Assessment Act* (CEA Act)

Keystone Pipeline Project

Applicant Name:	TransCanada Keystone Pipeline GP Ltd		
Application Date:	12 December 2006	**CEA Act Registration Date:**	27 July 2006
National Energy Board (NEB or Board) File Number:	OF-Fac-Oil-T241-200601 02	**CEA Registry Number:**	06-01-21045
CEA Act Law List Trigger:	NEB Act section 52	**CEA Act Determination Date:**	6 September 2007



KEYSTONE PIPELINE PROJECT - CANADIAN SECTION

Canada

SCREENING SUMMARY

This Report represents an Environmental Screening Report (ESR) for the Canadian portion of the TransCanada Keystone Pipeline GP Ltd. (Keystone) Keystone Pipeline Project (Project). The Project extends from Hardisty, Alberta, through Saskatchewan, to a point near Haskett, Manitoba. It involves acquisition and conversion to oil transmission service of 864 km of existing natural gas pipeline and the construction of 371 km of new oil pipeline. The Project also includes the construction and operation of pipeline operational tanks, pump stations (16), and other related physical works and activities. Approximately 60 km of new right of way (RoW), not contiguous with or alongside existing RoW, would be required for the new pipeline facilities. A number of watercourse crossings would be required for the construction of new pipeline facilities in Alberta and Manitoba, including crossings of the Red Deer and South Saskatchewan rivers in Alberta and the Boyne River in Manitoba.

The analysis in this ESR is based on Keystone's Application, Keystone's Environmental Protection Plan (EPP), the Environmental Alignment Sheets, and on evidence filed pursuant to Hearing Order OH-1-2007, including: Application Supplements dated 5 March 2007; Keystone's responses to NEB Information Requests (IRs) dated 2 and 9 April 2007 and 11 May 2007; evidence given at the oral hearing dated 4 June to 28 June 2007; Undertaking U-1 dated 19 June 2007; Undertaking U-4 dated 14 June, Public comments on the draft ESR dated 8 August 2007, and Keystone's comments on the ESR dated 15 August 2007.

This Report has been prepared for the purposes of assisting other Responsible Authorities (RAs) in preparing to make their own determination under the *Canadian Environmental Assessment Act* (CEA Act) to minimize potential duplication of effort in the assessment of the Project. The draft ESR was made available to the public for comment 25 July 2007, prior to the NEB determination. The final ESR includes comments by the public as well as RAs, and Federal Government Authorities (FAs) and Keystone.

The Board noted that the proposed Project has the potential to adversely affect several components of the environment, as detailed in the ESR. The Board has determined, pursuant to the CEA Act, that, taking into account the implementation of Keystone's proposed mitigation measures, compliance with the Board's regulatory requirements and the recommended conditions attached to the Board's environmental screening report, the construction and operation of the pipeline and associated facilities is not likely to cause significant adverse environmental effects.

To view Keystone's Application and the Environmental and Socio-Economic Assessment, please refer to the NEB website at: www.neb-one.gc.ca, click on "Regulatory Documents", and go to "Browse Regulatory Document Index", then go to "Looking for filing? Enter its Id here" and type in filing identification numbers A14322 to A14325 and click on "Go!" Filings related to the Application, refer to the following web address: https://www.neb-one.gc.ca/ll-eng/livelink.exe?func=ll&objId=446079&objAction=browse&sort=name

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1.0 ENVIRONMENTAL ASSESSMENT PROCESS

The application requested an authorization pursuant to section 52 of the *National Energy Board Act* (NEB Act), to construct and operate the Project. This triggers the CEA Act *Law List Regulations,* which in turn, require the preparation of this Environmental Screening Report (ESR).

Pursuant to the CEA Act *Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements*, the NEB coordinated RA and FA involvement in the CEA Act process by sending out a letter of notification. The Table below identifies the RAs and FAs that responded to the NEB's letter of notification and summarizes their involvement with respect to the Project. Other government participants are Saskatchewan Environment and Manitoba Conservation. Refer to Section 4.1 for a summary of public and government comments.

Table 1: Federal Government Participants in the CEA Act Process

Federal Government Agency	Involvement	
	Responsible Authority (RA) with a CEA Act Trigger	Federal Authority (FA) in possession of specialist advice
National Energy Board	NEB Act section 52	
Fisheries and Oceans Canada	*Fisheries Act* subsections 22(1), 22(2), 22(3), 35(2), 37(2) and section 32	X
Transport Canada	*Navigable Waters Protection Act:* paragraph 5(1)(a), subsection 6(4) and sections 16 and 20 NEB Act: section 108 Approval	
Canada Transportation Agency	*Canada Transportation Act*: section 32, where the review, rescission, variation or rehearing relates to a decision, order or application made under subsections 98(2), 99(3), 101(3), 116(4), 127(2) or 138(2)	
Indian and Northern Affairs Canada	*Indian Act* subsections 35(1) and 35(3)	
Environment Canada		X
Health Canada		X

NEB Hearing Order OH-1-2007 was released 29 January 2007, describing the process and requirements of the oral public hearing for the Project. As part of the process, a finalized scope of the environmental factors was released 15 March 2007. The oral public hearing began 4 June 2007 and concluded on 28 June 2007. The draft ESR was released for public comment on 25 July and the ESR with the NEB determination was released on 20 September 2007 to be used by other RAs in making their respective CEA Act determinations.

2.0 DESCRIPTION FOR THE PROJECT

The Keystone pipeline is a proposed crude oil line that would extend from Alberta, Canada to markets in Illinois, United States. The Canadian portion of the Keystone pipeline would extend

from Hardisty, Alberta, to a point near Haskett, Manitoba at the border between Canada and the United States. The Project proposes the conversion to oil service of 864 km of existing gas pipeline currently owned and operated by TransCanada PipeLines Limited and the construction of 371 km of new pipeline.

The purpose of the Project is to transport crude oil by underground pipeline from the Hardisty area of Alberta to markets in the United States. The Project would transport crude oil supply from the Western Canada Sedimentary Basin, which Keystone forecasts will grow by approximately 220 000 m^3/d (1.4 million bbl/d) between 2006 and 2015. In support of the Project, Keystone has secured long-term transportation contracts totaling 54 000 m^3/d (340 000 bbl/d) with an average duration of 18 years.

Table 2: Details of the Project

Physical Work and Activities ***(see Keystone Application section 12.0 and the ESR section 4.0 for additional detail)***
Construction Phase:
▪ Keystone's planned in service date for 1 November 2009 for the oil pipeline.
▪ Alberta Segment – construction of 271 km of 762 mm (NPS 30) pipeline during the summer and fall/winter of 2008 (July to early December); restoration and reclamation in October, November and early December, 2008 with additional restoration activities in summer 2009.
▪ Manitoba Segment – construction of 10 km of 864 mm (NPS 34) and 90 km of 762 mm (NPS 30) during summer and fall of 2008 (late June/early July to late November); restoration and reclamation would occur in October and November 2008, with additional restoration activities in summer 2009.
▪ Horizontal Directional Drill (HDD) Segments – April 2008.
▪ Conversion Segment – conversion of 864 km of 864 mm (NPS 34) of existing pipeline, Line 100-1, from natural gas to oil service from spring 2008 through to late June 2009.
▪ New valves and cathodic protection beds to be constructed for each of the new pipeline segments, and for the converted segment, the existing valves would be used and the existing cathodic protection beds extended.
▪ Pump Stations – construction of eight new pump stations would require 2.0 ha of new land, access roads and power lines, while the remainder would be co-located at existing compressor stations. Work at Hardisty (PS 5), Cabri (PS 11), Regina (PS 17) and Carmen (PS 26) would start in February 2008 and be completed by June 2009. Construction at the remaining twelve pump stations would start May 2008 and be completed by November 2009.
▪ Tankage Terminal – construction of the Hardisty tanks and associated piping would start March 2008 and be completed by June 2009.
▪ Fit for Service Testing - prior to operation ▪ Keystone has proposed that the new pipeline would be hydrostatically tested with water; ▪ the converted section would be tested by running both crack detection and magnetic flux leakage (MFL) tools prior to operation; and ▪ the tank facilities at the tankage terminal will be pressure tested using either water or oil.
Operation Phase:
▪ The Project facilities would have an in-service period in excess of 30 years.
▪ Vegetation control for non-native and noxious plant species.
▪ Periodic monitoring and follow-up for reclamation at wetlands, watercourses and native range.
▪ Monitoring and reclamation for subsidence and erosion.
▪ Pipeline integrity maintenance, monitoring and emergency response for oil leaks and ruptures.
Abandonment Phase:
▪ Any environmental effects associated with the abandonment phase are likely to be similar to those caused by the construction phase. Pursuant to the NEB Act, an application would be required to abandon the facility, at which time the environmental effects would be assessed by the Board.

3.0 DESCRIPTION OF THE ENVIRONMENT

Two routing alternatives have been considered for the Project. Each of these routing alternatives consisted of several options, which were evaluated from an engineering, land, human and environmental perspective. For the Alberta segment, each of the routes that were considered crossed provincially designated Environmentally Significant Areas (ESAs). Keystone selected a route that minimized potential fragmentation of native range, reduced the footprint of the Project by paralleling existing linear disturbances and in general, sited pump stations outside of ESAs except in the case of the Bindloss Pump Station – PS 9 located in the Remount ESA. Keystone's preferred pipeline route would cross agricultural lands, native range, rare ecological communities, wetlands and watercourses. The following environmental elements have been described in detail in the ESA for the proposed Keystone Project:

Atmospheric and Acoustic Environment

- Air contaminants (e.g. hydrogen sulphide, sulphur dioxide, nitrogen oxides, particulate matter etc.) and hazardous air pollutants (e.g. benzene, toluene, ethylbenzene, xylenes, and mercaptans) that could be potentially released due to the Project were assessed. All predicted ground-level concentrations of air contaminants associated with emissions from the proposed operational tank facilities and construction activities are within the reference regulatory limits for ambient air quality. For construction, Keystone assessed the effects of air contaminants as insubstantial.
- Generally, ambient sound levels would not be affected by the construction and operation of the pipeline and pump stations. This infrastructure would be constructed and operated in largely rural areas, and noise associated with it would not significantly change background ambient sound levels.

Soils

- The primary land use traversed by the Project is agricultural, consisting of annual cropland, hayland, improved pasture and native range. The ESA assesses the Project effects on soil resources with respect to changes in the physical, chemical and biological properties of soil. Soil units were used as the basis for determining construction mitigation procedures in the local study area (LSA). Soil units were defined based on soil series and soil phases.

Vegetation

- Rare plants and rare ecological communities were identified along the Project route in Alberta. In Manitoba, rare plants were found in riparian areas associated with watercourses crossed by the Project.

Wildlife

- Two amphibian species listed on Schedule 1 of the *Species at Risk Act* (SARA) were found along the Project route. The Great Plains Toad was identified in wetlands along the Project route in Alberta, and the Northern Leopard Frog was identified as occurring in riparian areas in Manitoba. Both of these species are listed as of Special Concern on Schedule 1 of SARA.

Three bird species listed as "Threatened" on Schedule 1 of SARA were observed in the wildlife LSA along the Project route in Alberta.

- 6 watercourses have been identified to have high ecological value specific to wildlife and vegetation and are proposed to be crossed using a trenchless method. The sites are the Boyne River, Shannon Creek, Deadhorse Creek, two Unnamed Creeks, and Buffalo Creek.

Fisheries and Hydrology

- The Project would cross 16 watercourses in Alberta, and 40 watercourses in Manitoba.
- 3 major watercourses are proposed to be crossed using horizontal directional drill (HDD), the Red Deer and South Saskatchewan Rivers in Alberta and the Boyne River in Manitoba.

Socio-Economic Environment

- The Project traverses lands that are primarily privately owned and are used extensively for agricultural production. Other land uses include oil and gas resources and recreational activities.
- Any Crown lands to be disturbed for new construction are located in Alberta. Specifically there are 49 tracks of Crown lands of which 43 are within provincially designated Special Areas.
- The Alberta/Saskatchewan section of the proposed Project is largely rural: it includes small towns and villages and traverses farm and ranch cattle country in grassland areas.
- The converted section of the proposed Project in Saskatchewan and Manitoba is located in an existing corridor utilized for a number of pipelines and generally along a relatively highly urbanized strip near the Trans Canada highway.
- In Manitoba the new pipeline would traverse low lying agricultural lands with varied agricultural production including specialty crops.
- The labour force in all areas is almost fully employed.

Heritage and Palaeontological Resources

- In Alberta, 59 historical or heritage sites would be affected, either partially or completely by the current configuration of the Project, and would require avoidance or mitigation. 44 of these have moderate to high heritage value.
- In Saskatchewan, there would be no sites in close proximity to the areas of new disturbance.
- In Manitoba, 3 historical or heritage sites would be affected, either partially or completely by the current configuration of the Project, and would require avoidance or mitigation.
- Palaeontological resources would be encountered in Alberta and Manitoba. In Alberta, there would be 3 sites with high potential to impact significant palaeontological resources.

Use of Lands and Resources for Traditional Purposes

- In Alberta there would be no Aboriginal communities within a 50 km radius of the proposed Project. The Project would be within the traditional territory of the Blackfoot Confederacy.

- In Saskatchewan, the existing pipeline traverses the Carry the Kettle First Nation reserve. The proposed Project would fall within the traditional territory used by the Treaty 4 First Nations and that claimed by Standing Buffalo Dakota First Nation (Standing Buffalo).
- In Manitoba, the Long Plain First Nation and Birdtail Sioux First Nation are located within 50 km of the proposed new pipeline. The proposed Project would be within the traditional territory claimed by the five Dakota Nations of Manitoba. The Birdtail Sioux, Canupawakpa, Dakota Plains, Dakota Tipi and Sioux Valley Dakota Nations are collectively known as the Dakota Nations of Manitoba. The Manitoba Métis Federation has an interest in lands of the new construction portion of the Project.

4.0 COMMENTS FROM THE PUBLIC

4.1 Project-Related Issues Raised in Comments Received by the NEB

To view the following submitted documents, please refer to the NEB website at: www.neb-one.gc.ca, click on "Regulatory Documents", go to "Browse the Regulatory Document Index", then "Looking for filing? Enter its Id here" and type in the filing ID numbers that appear in the table below and click on "Go!"

Table 3: Submissions to the NEB

Name	Comments	Date of Submission	Filing ID
Donald Harron	▪ Determination of significance ▪ Manitoba buffer guidance ▪ *Manitoba Endangered Species Act* ▪ Professional Judgment	2 April 2007	A15179
Manitoba Conservation and Manitoba Water Stewardship	▪ Habitat alteration and loss ▪ Location of wetlands and springs ▪ Endangered species habitat ▪ Migratory birds ▪ HDD of watercourses ▪ Live fish handling ▪ Precautions for drinking water ▪ Hydrostatic testing	10 April 2007	A15127
Environment Canada	▪ Atmospheric Environment ▪ Emergency Response Procedures ▪ Wildlife ▪ Request to comment on the draft Screening Report	11 April 2007	A15226
Transport Canada	▪ Interest and involvement in the Project	12 April 2007	A15253
Kessler Landowners Group	▪ Impacts to farming and ranching operations ▪ Abandonment of the pipeline ▪ Assumption of liability ▪ Conservation of topsoil ▪ Potential adverse impacts to water table	13 April 2007	A15262
Jon W. Kruse	▪ U.S. Department of State Scoping Summary	23 April 2007	A15398

4.2 Project-Related Issues Raised through Consultation Conducted by Keystone

Keystone initiated its stakeholder consultation program, including its consultation with Aboriginal groups on 9 February 2005 when the Project was announced. A range of consultation activities were carried out including personal contacts, mailing of Project information, open houses, a toll-free number and news releases. Stakeholder groups included landowners, community leaders, elected representatives, Aboriginal groups, regulatory agencies, emergency service organizations, special interest groups and co-located RoW owners.

Concerns raised by the public included routing and pump station locations, depth of cover on drainage ditches, integrity/safety/leaks, construction methods, weeds, exporting of resources, traffic and increased road use, compensation processes, impacts to agricultural lands, reclamation and land access requirements and tax revenue for municipalities.

Keystone contacted Aboriginal groups where Keystone was aware the Project crossed their reserve or claimed traditional territory. Keystone submitted that the Project is expected to have minimal impact on Aboriginal communities due to the distance of the proposed Project from communities and the type of lands traversed. Most communities indicated they had no concerns with the Project and some identified interest in the potential economic opportunities. When Standing Buffalo intervened in the regulatory process, Keystone became aware that the Project crossed their claimed traditional territory and Keystone initiated consultation with them. Keystone was not aware that Standing Buffalo was not a member of Treaty 4 and therefore not covered under the Treaty 4 Protocol Agreement with TransCanada respecting consultation. Keystone also became aware of the outstanding land claim of the Dakota Nations of Manitoba when they filed their intervention. Both groups raised concerns about the lack of consultation by the Crown and had concerns about the impact the Project could have on traditional sites and activities and unextinguished Aboriginal title. Standing Buffalo also raised concerns about lack of consultation by the proponent. Keystone negotiated an agreement with the Carry the Kettle First Nation granting permission for crude oil transmission across the reserve.

In the Application, Keystone submitted that all issues raised by stakeholders have been resolved or are expected to be resolved to the satisfaction of affected stakeholders. Where issues have not been resolved with Standing Buffalo and the Dakota Nations of Manitoba, Keystone committed to on-going consultation. Keystone also committed to on-going consultation with all potentially impacted parties and noted that its consultation would be guided by TransCanada's consultation practices and Aboriginal Relations Policy.

The Board has given due consideration to all comments raised throughout this proceeding. The comments that relate to the Board's *CEA Act* mandate have been considered in the preparation of this ESR. A broader discussion of consultation matters is included in the Board's Reasons for Decision.

4.3 Comments Received by the NEB on the Draft Environmental Screening Report

To view the following submitted documents, please refer to the NEB website at: www.neb-one.gc.ca, click on "Regulatory Documents", and go to "Browse Regulatory Document Index", then go to "Looking for filing? Enter its Id here" and type in the filing ID numbers that appear in the table below and click on "Go!"

Table 4: Comments on the draft Screening Report

Name	Topics	Filing ID
Environment Canada	▪ Inclusion of SARA listed bird species ▪ Agreement to review the Native Range Management Plan ▪ Contact Pauline Erickson – Edmonton Office for review ▪ ASRD to review seed mixes in province	A16170
Transport Canada	▪ NEB Act section 108 approval may be required for navigable waters ▪ Clarification regarding recommended NEB conditions	A16187
Standing Buffalo	▪ Impacts to Dakota/Lakota traditional use sites	A16188
Indian and Northern Affairs	▪ The document meets its requirements; items considered when reviewing the draft screening document were limited to items pertaining to the First Nations Treaty rights and on-reserve concerns	A16244

5.0 METHODOLOGY OF THE NEB'S ENVIRONMENTAL ASSESSMENT

In conducting the environmental screening, the NEB considered the factors set out in paragraphs 16(1)(a) through (d) of the CEA Act. The Board also considered the scope of the factors as described in Regulatory Document A15048. Further, in addition to assessing the need for the Project and alternatives to the Project, the NEB deems the following to be relevant matters pursuant to paragraph 16(1)(e) of the CEA Act and considered:

- Construction, operation, decommissioning, site rehabilitation and abandonment or other undertakings that are proposed by the Proponent or that are likely to be carried out in relation to the physical works proposed by the Proponent, including mitigation and habitat replacement measures.
- The natural variation of a population or ecological component.
- The timing of sensitive life cycle phases of wildlife species in relation to the scheduling of the Project.
- The time required for an effect to become evident.
- The time required for a population or ecological component to recover from an effect and return to a pre-effect condition, including the estimated degree of recovery.
- The area affected by the Project.
- The area within which a population or ecological component functions and within which a Project effect may be felt.

Baseline information and sources:

The analysis for this ESR is based on Keystone's application and responses to information requests, the EPP, letters of comment, and evidence submitted at the public hearing. For details on how to obtain documents, please contact the Secretary of the Board at the address specified in Section 8.0 of this Report.

Methodology of the analysis:

In assessing the environmental effects of the Project, the NEB used an issue-based, life-cycle approach. The design, planning, construction and operation were considered during the application assessment. Decommissioning and abandonment will be considered during a separate application process.

In its analysis within Section 6.1, the NEB identified interactions expected to occur between the proposed Project activities and the surrounding environmental elements. Also included were the consideration of potential accidents and malfunctions that may occur due to the Project and any change to the Project that may be caused by the environment. If there were no expected element/Project interactions then no further examination was deemed necessary. Similarly, no further examination was deemed necessary for interactions that would result in neutral potential effects. In circumstances where the potential effect was unknown, it was categorized as a potential adverse environmental effect.

Section 6.2.1 provides an analysis for all potential adverse environmental effects that are normally resolved through the use of standard design or routine mitigation measures. Section 6.2.2 provides a detailed analysis for each potential adverse environmental effect which is of public concern, involves non-standard mitigation measures, follow-up programs, or requires the implementation of an issue-specific recommendation. The analysis specifies mitigation measures, ratings for criteria used in evaluating significance as defined in Table 5, monitoring and/or follow-up programs, views of the NEB and any issue-specific recommendations.

Section 6.3 addresses cumulative effects, Section 6.4 addresses follow-up programs and Section 6.5 lists recommendations for the possible regulatory approval of the Project.

Table 5: Evaluation of Significance Criteria

Criteria	Definition
Frequency	▪ **Low**: at sporadic intervals during one phase of the Project lifecycle ▪ **Medium**: continuous during one phase of the Project lifecycle ▪ **High**: continuous throughout all phases of the Project lifecycle
Duration	▪ **Short term**: only during one phase of the Project ▪ **Medium term**: starts in construction and persists through operation ▪ **Long term**: beyond the lifecycle of the Project
Reversibility	▪ **Reversible**: adverse environmental effect would return to baseline conditions within the life of the Project ▪ **Irreversible**: adverse environmental effect would be permanent, or only reversible beyond the lifecycle of the Project
Biophysical and Socio-Economic Geographic Extent	▪ **Project Development Area** (PDA): the 30 m RoW and footprints associated with the construction of the pipeline, access roads, and associated facilities such as pump stations. ▪ **Local Study Area** (LSA): includes the PDA as well as a 500 m buffer on either side of the RoW. In some cases, the LSA is only the 30 m RoW. ▪ **Regional Study Area** (RSA): varies with each discipline, and can include such things as natural subregions, the home ranges of wildlife species, or an airshed.
Magnitude	▪ **Low**: adverse environmental effect would have a negligible influence on physical (e.g. soils and terrain), biophysical (e.g. vegetation, wildlife, fisheries, air quality), or social elements (e.g. human health, traditional land use, heritage resources, ambient noise levels) ▪ **Medium**: adverse environmental effect would have a local influence on physical, biophysical, or social elements ▪ **High**: adverse environmental effect would have a regional influence on physical, biophysical, or social elements
Evaluation of Significance	▪ "Likely to be significant" would typically involve effects that are: high frequency, irreversible, long term in duration, regional in extent or of high magnitude

6.0 ENVIRONMENTAL EFFECTS ANALYSIS

6.1 Project - Environment Interactions

	Environmental Element	Project Inter-action? Y/N/U	Description of Interaction (How, When, Where)	Potential Adverse Environmental Effect	Standard Mitigation to be Implemented
Biophysical	Soil and Soil Productivity	Y	▪ Burning woody debris on soil ▪ Topsoil stripping and restoration during construction activity ▪ Machinery operations ▪ Open trench wall slumping during construction ▪ Subsidence of the trench during operation	▪ Topsoil loss, compaction or mixing during handling	▪ Y
				▪ Topsoil loss from surface water erosion and wind erosion	▪ Y
				▪ Topsoil loss through trench instability	▪ Y
				▪ Increased stoniness of surface horizons	▪ Y
				▪ Trench subsidence and roach/crowning	▪ Y
	Vegetation	Y	▪ Vegetation disturbance prior to and during construction, and during the operation of the pipeline	▪ Disturbance of grasses, forbs, shrubs and trees	▪ Y
				▪ Disturbance of native range, rare ecological communities and rare plants	▪ N
				▪ Non-native or invasive weed introduction	▪ N
	Water Quality and Quantity	Y	▪ Ground water and wetland disturbance prior to and during clearing and construction ▪ During the excavation of the trench in fine texture clay soils in Manitoba ▪ During the excavation of the trench where unconfined groundwater is found in sandy sediments overlying clay sediments in the Lower Assiniboine Delta ▪ Failure of watercourse isolation measures during excavation of a watercourse ▪ Failure of a temporary vehicle crossing over a watercourse	▪ Disruption of surface water hydrologic flow	▪ Y
				▪ Disruption of subsurface hydrologic flow and reduction of groundwater quality and quantity	▪ Y
				▪ Disruption of aquifer quality and quantity	▪ Y
				▪ Reduced groundwater flow leading to increased saturation and increased salination	▪ Y
				▪ Disruption to water wells	▪ Y
				▪ Introduction of sediments	▪ Y
				▪ Introduction of contaminants, including any other deleterious substances	▪ Y

Legend: Y (Yes, see section 6.2.1); N (No, see section 6.2.2); U (Uncertain)

	Environmental Element	Project Inter-action? Y/N/U	Description of Interaction (How, When, Where)	Potential Adverse Environmental Effect	Standard Mitigation to be Implemented
	Fish and Fish Habitat	Y	• Excavation of trench through watercourse • Installation of vehicle access over watercourses • Failure of HDD	• Sediment entering watercourses and erosion of disturbed areas adjacent to waterbodies	• Y
				• Deterioration of aquatic ecological integrity (fish-bearing and non-fish bearing) and loss of fish habitat, including blockage of fish passage during migration periods	• Y
				• Fish and aquatic organism mortality, including: destruction of fish eggs; temporary or permanent alterations in water flow; and loss of potential food supply	• Y
				• Harmful alteration, disruption or destruction of fish habitat (including riparian vegetation) from the pipeline installation and access	• N
	Wetlands	Y	• Clearing vegetation, stripping organic layer, excavating trench, and backfilling during construction	• Loss of wetland function, terrestrial and aquatic habitat in wetlands	• N
				• Disturbance to surface water and subsurface hydrologic flow	• Y
	Wildlife and Wildlife Habitat	Y	• Removal of shrubs and trees during RoW and temporary workspace clearing • Increase of noise level during construction • Worker interaction with wildlife • Waste generated by construction activity • Construction activity in wetlands • Excavation on the right-of-way	• Disturbance of wildlife habitat	• Y
				• Disturbance to nesting birds	• N
				• Disturbance to wildlife	• Y
				• Sensory disturbance to wildlife	• Y
				• Wildlife conflicts and mortality	• Y
				• Habituation of wildlife to construction waste	• Y
				• Increased and long term vegetation management on the RoW	• Y
	Species at Risk (federal), COSEWIC and SARA – Table 9-4 of ESA	U	• Disturbance of listed species during clearing, site preparation and equipment operation	• Disturbance to SARA listed amphibians and habitat (*Northern Leopard Frog, Great Plains Toad*)	• N

Legend: Y (Yes, see section 6.2.1); N (No, see section 6.2.2); U (Uncertain)

	Environmental Element	Project Inter-action? Y/N/U	Description of Interaction (How, When, Where)	Potential Adverse Environmental Effect	Standard Mitigation to be Implemented
				▪ Disturbance to SARA listed birds (Peregrine Falcon, Burrowing Owl, Piping Plover, Whooping Crane, Ferruginous Hawk, Short-eared Owl, Loggerhead Shrike, Sprague's Pipit, Long-Billed Curlew, McCown's Longspur, Yellow Rail)	▪ Y
				▪ Disturbance to a SARA listed mammal *(Ord's Kangaroo Rat)*	▪ U
	Species of Special Status (provincial, territorial, local) – Table 9-4 of ESA	N	▪ Disturbance of listed species during clearing, site preparation and equipment operation	▪ Disturbance to special status herptiles (Prairie Rattlesnake, Plains Hognose Snake)	▪ U
				▪ Disturbance to special status birds (Baird's Sparrow, Great Blue Herron, Prairie Falcon)	▪ U
				▪ Disturbance to special status mammals *(American Badger, Mule Deer)*	▪ Y
	Air Quality	Y	▪ Vehicles and equipment operation during construction ▪ Dust generated by vehicles and equipment on gravel roads and the RoW ▪ Emissions generated by the tankage terminal	▪ Decreased local air quality during construction, operation and maintenance	▪ Y
Socio-Economic	Human Occupancy/ Resource Use	Y	▪ Clearing and construction activities on the RoW	▪ Disturbance to agricultural operations	Y
	Heritage Resources	Y	▪ Clearing and construction activities on the RoW	▪ Loss or alteration of previously identified and unidentified heritage or palaeontological resources	Y
	Traditional Land and Resource Use	U	▪ Clearing and construction activities on the RoW	▪ Loss or alternation of traditional use site ▪ Disruption or inability to carry out traditional activities	U
	Socio and Cultural Well-being	N	-	-	
	Human Health/ Aesthetics	U	▪ Refer to Air Quality and Water Quality and Quantity sections above	▪ Health effects from decreased air quality during construction and impacts to water wells	Y

Legend: Y (Yes, see section 6.2.1); N (No, see section 6.2.2); U (Uncertain)

	Environmental Element	Project Inter-action? Y/N/U	Description of Interaction (How, When, Where)	Potential Adverse Environmental Effect	Standard Mitigation to be Implemented
Other	Accidents/Malfunctions	Y	▪ Operation and fuelling of machinery on the RoW and temporary work space ▪ During the discharge of hydrostatic test water ▪ Wildfire initiated by construction activities ▪ Leak or rupture of the existing pipeline during construction ▪ Leak or rupture of the pipeline during operation	▪ Introduction of contaminants to soil, water and wetlands from vehicles and equipment	▪ Y
				▪ Introduction of crude oil to soil, water and wetlands from a leak or rupture of the pipeline	▪ N
	Effects of the Environment on the Project	Y	▪ Flooding at watercourses due to weather events during construction and operation	▪ Erosion of in-stream substrate and banks of watercourses	▪ Y
				▪ Soil erosion, subsidence, slope failure	▪ Y

Legend: Y (Yes, see section 6.2.1); N (No, see section 6.2.2); U (Uncertain)

6.2 Potential Adverse Environmental Effects

To mitigate environmental effects, Keystone committed to reasonable goals and objectives for construction, reclamation and operation of the pipeline as outlined in its ESA, EPP and Environmental Alignment Sheets.

Several mitigation strategies have been proposed to avoid or minimize the effects of the Project, including avoidance through route selection; scheduling of activities to avoid sensitive periods; developing mitigation measures to address site-specific and general issues; inspection during construction to ensure mitigation is implemented and effective; and maintenance activities during the operation of the pipeline system.

In addition, if the Project is approved, the NEB would work with Keystone through technical meetings to ensure that best practices would be recorded in the final EPP, Environmental Alignment Sheets and in the Keystone Environmental Commitments Tracking List (ECTL).

6.2.1 Analysis of Potential Adverse Environmental Effects to be Mitigated through Standard Measures

Keystone has provided standard design and mitigation measures both in the ESA, the EPP and the Environmental Alignment Sheets. These measures have been assessed by the NEB and meet the objective of mitigating potential adverse environmental effects.

A standard mitigative measure is a specification or practice that has been developed by industry, or prescribed by a government agency, that has been previously employed successfully, and meets the expectations of the NEB.

The NEB is of the view that for this Project, if Keystone follows the standard design and mitigative measures proposed in the application, commitments made during the oral public hearing and adherence to the recommendations found section 6.5 of the ESR, the potential adverse environmental effects are not likely to be significant.

6.2.2 Detailed Analysis of Potential Adverse Environmental Effects

A detailed analysis is provided for each potential adverse environmental effect which is of either public concern, involves non-standard mitigation measures, follow-up programs, or requires the implementation of an issue-specific recommendation.

The analysis specifies those mitigation measures, ratings for criteria used in evaluating significance, monitoring and/or follow-up programs, views of the NEB and any issue-specific recommendations.

6.2.2.1 Native Range, Rare Ecological Communities and Rare Plants and Wildlife in Alberta

From Section 6.1	• Disturbance of native range, rare ecological communities and rare plants
Background/Issues	The selected route would cross approximately 75.5 km of ESAs including seven provincial and four nationally significant ESAs (Silver Heights, Grassy Island Native

	Prairie, Remount and the South Saskatchewan Canyon) including crossing approximately 190 km of native prairie and 2.5 km of greenfield RoW. Fescue prairie is extremely vulnerable to disturbance and invasion by non-native species and is difficult to reclaim, particularly if it is subject to heavy or spring grazing. In addition, shifts in vegetation types are likely to occur in plains rough fescue communities. The Northern Fescue Grasslands are among the most threatened biogeographic regions on the Canadian plains "...only five percent or less of its original area remains". Environment Canada (EC), in a letter dated 3 April 2007 has recommended a revision to Keystone's proposed seed mixes to include additional forb species to provide a better balance, and the use of local native ecological varieties especially where crossing large tracts of native prairie. EC notes that acquiring these seed mixes in advance of reclamation activities may be essential to ensure availability. Further, EC recommends that Alberta Sustainable Resources Development (ASRD) be consulted for seeding in native range areas that are the responsibility of that department. The Bindloss Pump Station - PS9 is to be located in the Remount ESA on native rangeland. This area is one of the largest continuous blocks of native grassland in Canada. In the vicinity of the proposed station, SARA listed bird species are known to occur. Hydraulic analysis conducted by Keystone has determined that PS9 has the potential to be moved in the order of approximately 5.0 kilometres upstream or downstream of the proposed location. Keystone submitted in a letter dated 1 June 2007, that "Keystone has revisited the proposed PS9 location and still finds it to be in the optimal location based on the pump station site location criteria". In Information Request Response (IRR) 3.1, Keystone stated "[i]n selecting the final location of PS9, it was necessary to balance the site selection criteria, system hydraulics and potential wildlife impacts and the related wildlife mitigation measures". Keystone went on to state "[t]he only wildlife potentially affected by the construction and operation of this pump station are birds, and the potential for effect is only expected to occur during the nesting and breeding period". At the oral public hearing, the Board requested the following in Undertaking - 1. *Provide a discussion of all considerations, including the cost analysis, design limitations and a comparison of the ecological trade-offs for re-locating the PS9 – Bindloss Pump Station outside the Remount ESA to a location that would reduce environmental effects.* Keystone's assessment of the optimum location for PS9 is further described in its response to Undertaking – 1, dated 19 June 2007. Keystone provided justification for the selected location of PS9-Bindloss Pump Station considering the environmental effects trade-offs of the alternate locations. For example, the need for additional access road and powerline land requirements in native rangeland and the possibility of requiring an additional pump station to support the hydraulic requirements of the pipeline.
Mitigation Measures	Keystone's general mitigation measures are described in the ESA, EPP and the Environmental Alignment Sheets. ▪ no more than 5% of provincially rare communities and no more than 1% of the occurrence of globally rare communities would be disturbed ▪ specific mitigation measures for native range would be incorporated into the EPP ▪ consult with ASRD and EC to refine mitigation plans and appropriate seed mixes for inclusion in the EPP ▪ specific mitigation to minimize the effects of invasive non-native species and weeds where rare plants exist, consult with ASRD and EC for confirmation of appropriateness and incorporate into the EPP and the Operations Vegetation Management Plan ▪ where rare ecological communities and riparian vegetation exists, only conduct vegetation management where there is a need to control restricted or noxious weeds,

	or for safety reasons where woody vegetation has encroached across the ditchline. ▪ for the Bindloss Pump Station - PS9 (PS9), schedule construction to avoid the sensitive nesting and rearing period (approximately April 15 to July 31) ▪ where practicable, maintenance activities will be timed to avoid nesting periods ▪ if construction occurs in the vicinity of any active nest sites: pre-construction nesting surveys; monitoring of nests; speed limits; limiting vehicle numbers and trips would be implemented ▪ At PS9: bore under the abandoned railway RoW and secondary highway to avoid any impacts to SARA listed bird species ▪ construction would be timed to avoid the bird nesting and rearing period to prevent any disturbances from noise emissions ▪ the ECTL would include requirements to protect rare wildlife species found in the vicinity of PS9, and these requirements would be extended to include operation of the station ▪ during the operation of the PS9, conduct regular orientations for pump station staff to ensure requirements for the protection of rare wildlife species is understood ▪ Keystone has proposed that for two years post-construction, it would conduct follow-up and monitoring to confirm the effectiveness of mitigation measures in reducing environmental effects caused by construction and operation of PS9
Monitoring	▪ Monitoring as required by the NEB *Onshore Pipeline Regulations, 1999*
Follow-up Program	The NEB recommends a Native Range Management and Follow-up Program in order to ensure clarity of the mitigation to be applied during construction, and the specifics of a follow-up program for post-construction.
Views of the NEB	The NEB recognizes that native range is a rare and declining ecosystem and that mitigation strategies may have limited effectiveness. Therefore, there maybe a requirement for adaptive approaches as a result of a scientifically based follow-up program. In addition, the pipeline route Keystone has proposed, along with PS9, would be located in ecologically sensitive areas. The following conditions are recommended: Condition E – file for approval a Native Range Management and Follow-up Program Condition J – file confirmation of EC, CWS and ASRD acceptance of seed mixes The desired end result of these conditions is to evaluate the Native Range Management Plan and Follow-up Program to ensure commitments made in the application and any post approval Technical Meetings as described below are captured for construction and operation of the pipeline located in native prairie. It is also the intent of these conditions to ensure that other responsible government agencies are satisfied with the programs and commitments prior to construction. If the Project is approved, a Technical Meeting with Keystone would be conducted to finalize the details of the Native Range Management and Follow-up Program prior to filing for NEB approval and the commencement of construction. The NEB is of the view that the route selected would have the least environmental effects of the alternatives and options presented by Keystone.
Evaluation of Significance	Frequency: High Duration: Medium term Reversibility: Reversible Geographical Extent: PDA Magnitude: Medium Adverse Effect Not likely to cause significant adverse environmental effects.

Refer to Table 5 for definitions of the Evaluation of Significance Criteria

6.2.2.2 Accidents and Malfunctions

From Section 6.1	▪ Introduction of contaminants, including any other deleterious substances ▪ Introduction of crude oil to soil, water and wetlands from a leak or rupture of the pipeline
Background/Issues	Keystone proposes to construct 361 km of new 762 mm (30 inch) and 10 km of new 864 mm (34 inch) pipeline in Alberta and Manitoba and convert 864 km of 864 mm (34 inch) pipeline from natural gas to oil service in Saskatchewan and Manitoba. Keystone is proposing three HDD watercourse crossings and five trenchless watercourse crossings for the Project, resulting in a total of eight trenchless watercourse crossings. The following are Project-related accidents and malfunctions that could occur during the construction, operation, decommissioning and abandonment phases of the Project: ▪ Equipment failure and accidental spill of hazardous materials, e.g. fuel, lubricants, coolants, etc. ▪ Inadvertent mud release during HDD watercrossings; and ▪ Pipeline failure during operations resulting in an accidental release of crude oil. Keystone is required by DFO to develop monitoring and emergency response plans for HDD crossings to address any potential inadvertent mud release during trenchless crossings, as well as contingency plans should the crossing prove unsuccessful. In addition, Keystone would conduct a geotechnical investigation for each crossing as part of the HDD design to minimize the risk of inadvertent mud releases. The operational failure of a pipeline has the potential to release crude oil into the environment. Keystone would develop programs to manage the risk of pipeline failure to ensure that all potential effects on the environment from a release of crude oil are prevented or minimized for all biophysical components. ▪ Keystone IRR 3.5 indicates the preliminary design has located valves based on a review of the following environmental features: ▪ wetlands and native range ▪ watercourses ▪ drinking water ▪ shallow aquifers In IRR 5.6, Keystone provided Table 1 – Valve Assemblies and the Environmental Features for the Keystone Project. This table identifies the location, the valve type, and the predicted volumes of a leak or rupture based on a variety of variables at or near sensitive environmental features. The outflow modeling for the Project indicates that if there was a leak or a rupture on the converted portion of the Project, versus the new pipeline portions, 1.6 to 1.8 times more product would be released depending on the commodity type (synthetic crude or heavy blend). In IRR 3.5, "Keystone's design of the pipeline and proposed management systems, considered the following requirements to enhance environmental protection: ▪ installation of a computational model-based leak detection system and Supervisory Control and Data Acquisition system (SCADA) which would be continuously monitored from Keystone's operations control center; ▪ implementation of a risk-based integrity management program to monitor and ensure the integrity of all pipeline related facilities….; ▪ development and implementation of control center and field operating procedures; and ▪ training of emergency response personnel." ▪ In the unlikely event of a leak or rupture of the pipeline, Keystone would refer to the Emergency Response Plan and Integrity Management Program for direction on public safety and remediation measures to be implemented.
Mitigation Measures	In addition to the standard mitigation measures in the ESA and EPP for equipment failure and accidental spill of hazardous materials, the following Plans have been developed to

	respond to potential environmental effects: Waste Management Plan, Contaminated Soils Contingency Plan , HDD Contingency Plan, and the Spill Contingency Plan.
	
	For inadvertent mud releases during HDD, Keystone would develop contingency and response plans that would include a protocol to monitor construction, to stop work in the event of a release, to contain and clean-up drilling fluids and mitigation measures.
	
	The following general mitigation has been proposed by Keystone for minimizing the effects of a leak or rupture:
	▪ installation of remotely controlled block valves at a nominal distance of 30 km, including the mainline valves at pump stations;
	▪ installation of additional valves as determined by the consequence analysis; and
	▪ retention of the original valve assemblies on 100-1 if they operate for liquid service.
	
	Measures to be taken by Keystone to prevent, detect and mitigate potential leaks and ruptures, including those at drinking water locations as provided in IRR 5.6:
	<u>Prevention</u>
	Design and construction practices for the new pipeline would include:
	▪ quality control of the pipe manufacturing and coating process;
	▪ hydrostatic testing of pipe joints at mill;
	▪ construction management and inspection of the pipeline installation contractor;
	▪ 100% non-destructive testing of the circumferential girth welds at each pipe joint;
	▪ complete field coating of welded joints to ensure coating is continuous along 100% of pipeline;
	▪ hydrostatic testing of completed pipeline as per CSA Z662 guidelines;
	▪ installation of cathodic protection systems; and
	▪ installation of automated control systems, both centrally and locally, to ensure the pipeline operates within design parameters and prescribed pressure limits.
	
	The Integrity Management Program would include as stated in IRR 5.6:
	▪ in-line inspection to ensure defects could be identified and proactively repaired;
	▪ periodic monitoring of the pipeline cathodic protection system;
	▪ continuous monitoring of product quality;
	▪ periodic aerial patrols by helicopter or fixed wing aircraft;
	▪ landowner/stakeholder awareness program, including periodic contacts; and
	▪ pipeline markers and warning signs to indicate the presence of the pipeline.
	
	<u>Detection</u>
	▪ automated pipeline leak detection system;
	▪ pipeline system control, including 24 hours monitoring of the system operation; and
	▪ an operator training program for responding to leaks and ruptures in a timely manner.
	
	<u>Mitigation</u>
	▪ install and automate isolation valves at strategic locations to limit spill outflow volume to levels that can be adequately addressed through the execution of the Emergency Response Plan (ERP); and
	▪ implement a ERP that includes
	  ▪ pre-determined resources strategically situated along the route to respond to a leak or rupture identified in the outflow analysis;
	  ▪ implement enhanced site specific plans to minimize the impact to major environmental features under various weather conditions;
	  ▪ provide timely notification reporting to stakeholders including: landowners, local emergency responders, and government authorities;
	  ▪ provide training and periodic exercises in the execution of the ERP.

Monitoring	▪ Monitoring as required by the NEB *Onshore Pipeline Regulations, 1999*
Views of the NEB	The NEB notes the various mitigation proposed by Keystone to reduce potential impacts in the event of an accident or malfunction. Given the higher consequences associated with a spill or failure in ecologically sensitive areas, including watercourses, it is

	recommended that any approval granted to Keystone by the NEB be conditioned such that the Board could verify that the mitigation would be specified appropriately on a site-specific basis. Condition D – file Emergency Response Plan (ERP) that includes the locations of environmentally sensitive areas and valve locations Condition P – file an ERP for pressure testing Condition N – file a drill execution plan for HDD The purpose of these conditions would be to facilitate the Board in assessing and verifying Keystone's emergency procedures in order to consider the safety of people and the protection of property and the environment in the event of an incident or a failure. The NEB is of the view that Keystone's proposed mitigation in combination with fulfillment of the above noted conditions is sufficient to minimize environmental effects due to accidents and malfunctions related to the construction and operation of the Project.
Evaluation of Significance	Frequency: High Duration: Medium term Reversibility: Reversible Geographical Extent: RSA Magnitude: High Adverse Effect Not likely to cause significant adverse environmental effects.

Refer to Table 5 for definitions of the Evaluation of Significance Criteria

6.2.2.3 Preservation and Reclamation of Native Vegetation

From Section 6.1	▪ Disturbance of native range, rare ecological communities and rare plants ▪ Non-native or invasive weed introduction
Background/Issues	Keystone submitted the following information in the ESA. Native vegetation in the Manitoba Plains has been heavily impacted by agriculture, and native grassland has been almost completely removed from the region. Riparian areas cover only 1-2% of the total land base on the prairies, and only very small areas of native vegetation remain, primarily as riparian areas along creeks and rivers. For the Keystone Project, there are 40 proposed water crossings in Manitoba and at some of those crossings native vegetation remains, i.e. trees, shrubs, grasses and rare plants. For Manitoba, the remaining patches of native vegetation are highly vulnerable to further fragmentation. Losing even small numbers of rare plants may affect the viability of provincial or national populations. While most of the pipeline in Manitoba is adjacent to existing pipelines, there would be 20 km of new pipeline not contiguous with existing pipelines. Areas adjacent to watercourses are susceptible to fragmentation, as they act as corridors for vegetation propagules, as well as for insects, birds and mammals. Each one is essential for pollination, seed dispersal and herbivory, and provide critical habitat for fish and amphibian species. In addition, species diversity may be potentially altered from the introduction and spread of non-native and invasive plant species during operation of the pipeline. As a result of Keystone's operational practices in Manitoba, the ESA states that there would be effects to shrubby and wooded communities with high ecological value and rare ecological communities may be affected, as any native trees or shrubs that re-establish would be controlled to some extent. In addition, the ESA states that in riparian areas in Manitoba, vegetation maintenance during operation has the potential to reduce habitat availability throughout the lifetime of the Project. As stated in IRR 3.7, "All watercourse crossings with high ecological value for wildlife

	have been proposed as trenchless crossings due to the presence of SARA-listed species". In IRR 3.7, Keystone has identified six water crossings with high ecological value and has provided an effects analysis for each. Keystone proposes to cross six of the watercourses using a trench-less method as confirmed in the oral public hearing, 7 June 2007, including: ▪ Boyne River (Kp 1174.25, 1175.35, 1174.39); ▪ Shannon Creek (Kop 1201.25); ▪ Deadhorse Creek (Kp 1205.1); ▪ Unnamed Creek (Kp 1217.4); ▪ Unnamed Creek (Kp 1219.73); and ▪ Buffalo Creek (Kp 1232.86) Keystone has submitted that a decrease of common native vegetation may occur as a result of Right-of-Way preparation activities such as topsoil stripping and grading, and to a limited extent clearing of woody vegetation at selected sites in Alberta. A decrease of communities of high ecological value or communities that are considered rare ecological communities may result in a reduction or loss of diversity. During the operation of the pipeline, Keystone indicates in the ESA that mechanical vegetation management may occur over the hotline to a total width of 10 m. The ESA further states that "[v]egetation control potentially alters the habitat of rare species observed that are currently present as understory species (i.e., all rare plant occurrences occurred as an understory)". In addition, "...effects to shrubby and wooded communities with high ecological value and rare ecological communities may be affected as any native trees or shrubs that re-establish may be controlled to some extent during pipeline operation." Keystone has submitted that vegetation management would only be undertaken where there is a need to control restricted or noxious weeds, or for safety reasons where woody vegetation has encroached across the ditchline.
Mitigation Measures	In addition to the standard mitigation measures in the ESA and EPP, Keystone provided additional mitigation in IRR 3.7, for the watercourses in Manitoba with high ecological value these were aimed to: ▪ prevent the loss of individual species of rare plants and Northern Leopard Frogs; and ▪ develop site specific construction and mitigation plans for salvaging plants, reducing clearing and grading, narrowing the width of the RoW, reduced vehicle access and a proactive reclamation plan. For the conservation of rare plant species occurring on the new pipeline RoW, Keystone provided the following measures in IRR 5.4: ▪ clearly flag all rare plant sites ▪ ditchline stripping at flagged areas ▪ clean all construction equipment of vegetative materials ▪ reduce extra temporary work space ▪ reduce grading ▪ ensure there are no weed seeds in seed mixes ▪ conduct reclamation as soon after final clean-up as weather and environmental conditions permit ▪ restrict vehicle/equipment travel post reclamation ▪ install exclusion fencing to prevent grazing ▪ post construction monitoring to assess success and identify remedial areas ▪ develop vegetation management plan in consultation with ASRD and EC.
Monitoring	▪ Monitoring as required by the NEB *Onshore Pipeline Regulations, 1999*
Views of the NEB	The NEB is concerned with the preservation of riparian vegetation and native range along with the potential for invasive plant species to replace native vegetation as a result of the Project. The following recommended conditions would mitigate these concerns:

	Condition B – file the Environmental Tracking Commitments List Condition C – file an updated EPP that includes all commitments Condition M – preserve riparian vegetation at select watercourses The desired end result of these conditions is to: ensure all commitments and requirements are documented, tracked and available to construction staff; to ensure all mitigation measures are in the final version of the EPP; and to ensure areas with high ecological value at select watercourses are preserved.
Evaluation of Significance	Frequency: High Duration: Medium term Reversibility: Reversible Geographical Extent: PDA Magnitude: Medium Adverse Effect Not likely to cause significant adverse environmental effects.

Refer to Table 5 for definitions of the Evaluation of Significance Criteria

6.2.2.4 Fish and Fish Habitat

From Section 6.1	▪ Harmful alteration, disruption or destruction of fish habitat (including riparian vegetation) from the pipeline installation and access
Background/Issues	Watercourse crossing method selection was based on an assessment of a number of factors as indicated in IRR 3.7, including: ▪ the potential for adverse impact of fish and fish habitat; ▪ scheduling of construction to avoid instream restricted activity periods; ▪ the amount of available space to complete the crossing; ▪ the ability to reclaim the crossing and associated riparian area; and ▪ geotechnical factors.
Mitigation Measures	Standard mitigation measures were provided in the Keystone ESA, the detailed watercourse data sheets and the EPP.
Monitoring	▪ Monitoring as required by the NEB *Onshore Pipeline Regulations, 1999*
Views of the NEB	Keystone has made an adequate commitment to achieve the goal for the protection of fish and fish habitat during the construction and operation of the Project. However, Keystone has not filed the final design details for the major watercourses, nor the details for reclamation at the more sensitive watercourses. In the ESA, Appendix 11-2, Table 5.0, it is indicated that DFO requires detailed contingency plans for HDD locations. These details are also required to ensure that the design, implementation, contingency plans and reclamation at watercourses meet the expectations of the NEB. Keystone has committed to providing the details for the proposed HDD crossing procedures, timing, contingencies, alternative crossing methods, timelines and contingency measures with a "pending" due date. In order to ensure that the design, implementation, contingency plans, and reclamation at watercourses meets the expectations of the NEB, detailed information for the major watercourse crossings and HDD crossings, updates to the watercourse data sheets, and all commitments made to DFO regarding the details of watercourse crossings are required by the NEB: Condition H – file DFO Watercourse Compensation Plan Condition L – notify in advance timing for excavation of watercourse crossings Condition N – file HDD Drill Execution Plan Condition O – file change from HDD crossing to another method

	If the Project is approved, a Technical Meeting with Keystone and DFO would be organized by the NEB to finalize the details of the mitigation and reclamation measures prior to the filing of the final EPP for approval by the NEB and the commencement of construction.
Evaluation of Significance	Frequency: Medium; Duration: Medium term; Reversibility: Reversible; Geographical Extent: LSA; Magnitude: Medium Adverse Effect Not likely to cause significant adverse environmental effects.

Refer to Table 5 for definitions of the Evaluation of Significance Criteria

6.2.2.5 Wildlife and Wildlife Habitat

From Section 6.1	▪ Loss of wetland function, terrestrial and aquatic habitat in wetlands ▪ Disturbance to nesting birds ▪ Disturbance to SARA listed amphibians and habitat ▪ Disturbance to SARA listed and special status birds ▪ Disturbance to a SARA listed and special status mammals ▪ Disturbance to special status herptiles
Background/Issues	The Keystone ESA describes the broad effects to wetlands from pipeline construction. The assessment states that wetlands provide a significant source of vegetation, bird and animal diversity and that for this Project, a high proportion of wetlands surveyed contained rare plants, life stage habitat for migratory birds, and critical habitat for SARA listed amphibian species. Keystone stated that due to the size of the RoW and the resulting vegetation clearing, there may be effects on local hydrology and significant effects on ephemeral, temporary and other wetlands. The ESA also stated that for toads and frogs, pipeline construction through existing ephemeral or temporary wetlands may result in a potential irreversible loss of habitat for these species if pipeline as construction negatively alters local surface and/or groundwater flow thus, impacting the hydrologic regime of the particular wetland. It is recommended in the ESA that when riparian areas or wetlands are encountered and re-routing (re-alignment) is not possible, that trench-less construction be used to reduce potential mortalities and to avoid destroying any amphibian habitat. In IRR 3.6, Keystone stated that "additional field work is planned for April 2007 to delineate the pipeline right-of-way boundary relative to wetlands where SARA-listed amphibian species have been observed or are likely to occur." Further, Keystone commits to consult with Alberta Sustainable Resource Development and Canadian Wildlife Service "...to determine the need for further mitigation, including avoidance of wetland habitat". IRR 5.7 states ..." Keystone recognizes the importance of the Policy (Federal Policy on Wetland Conservation) and its associated goals and strategies, and has accommodated the objective of no net loss of wetland function by avoiding wetlands altogether or, where avoidance is not feasible, through mitigation strategies of soils conservation and natural recovery". At this time, not all of the mitigation recommendations in the ESA have been captured in the EPP and Alignment Sheets.
Mitigation Measures	Keystone has submitted in IRR 3.6 that "[a]dditional Field work is planned for April 2007 to delineate the pipeline RoW boundary relative to wetlands where SARA-listed amphibian species have been observed or are likely to occur. The results of the field work, in consultation with ASRD and CWS, would be used to determine the need for further mitigation, including avoidance of wetland habitat".

	Keystone has committed to include all mitigation measures for each of the selected sites in the EPP and on the environmental alignment sheets.
Monitoring	▪ Monitoring as required by the NEB *Onshore Pipeline Regulations, 1999*
Views of the NEB	The NEB recognizes that there is potential for the Project to disturb SARA listed species, species of special status and birds protected by the *Migratory Bird Convention Act*. In addition, Keystone has further field work to complete prior to finalizing mitigation. Keystone did not clearly commit to avoiding wetlands and watercourses with SARA listed amphibian species as recommended by the ESA and the other government agencies. In order to verify appropriate protection of species at risk and to confirm that sufficient consultation has taken place with EC, CWS and ASRD regarding mitigation, conditions would be recommended for inclusion in any approval granted to Keystone: Condition I – file mitigation for amphibian species at risk Condition K – conduct a nesting bird survey if construction is to occur within the restricted activity period (RAP) If the Project is approved, a Technical Meeting with Keystone would be organized by the NEB to finalize the details of the mitigation measures prior to the filing of the final EPP and the commencement of construction.
Evaluation of Significance	Frequency: Medium Duration: Medium term Reversibility: Irreversible Geographical Extent: LSA Magnitude: High Adverse Effect Not likely to cause significant adverse environmental effects.

Refer to Table 5 for definitions of the Evaluation of Significance Criteria

6.2.2.6 Environmental Training and Qualifications

From Section 6.1	▪ Implementation of mitigative measures for potential adverse environmental effects listed in Section 6.1
Background/Issues	Keystone has provided general qualifications, responsibilities and training in the EPP for ensuring environmental compliance. The ESA indicated that the Environmental Inspector would provide advice on major decisions or courses of action to deal with major unexpected environmental conditions. In IRR 3.9 Keystone provided the following qualifications for Environmental Inspectors: ▪ a university degree in the natural sciences ▪ a college diploma or technical certificate will be considered if the applicant has excellent credentials in the other three categories; ▪ an equivalent combination of education and experience; and ▪ Lead Environmental Inspectors would have a minimum of five years direct experience. In IRR 3.9 Keystone indicated that a "comprehensive in-house training program will be conducted for all Environmental Inspection staff and any additional environmental Resource Specialists…" IRR 3.9 does not indicate the environmental training for construction contractor personnel, nor how competency would be measured to ensure compliance to the commitments made by Keystone to protect the environment. Keystone has provided general qualifications, responsibilities and training in the EPP for ensuring environmental compliance. It is noted in the EPP that the Environmental Inspector would provide advice on major decisions or courses of action to deal with major

	unexpected environmental conditions. In IRR 3.9 the Board asked Keystone to "[d]escribe the authority that would be given to Environmental Inspectors and related field staff to ensure implementation of environmental commitments and their respective reporting relationships". Keystone responded that "[t]he Environmental Inspector will have overall responsibility to ensure that all environmental commitments, undertakings and conditions of authorizations are met and that work is completed in compliance with all applicable environmental regulations and Keystone policies, procedures and specifications". IRR 3.9 also stated "any non-compliance, including alterations or variances to approved measures, is the responsibility of the Environmental Inspector to report to the Construction Manager". During the oral public hearing, Keystone committed to providing: the environmental training syllabus for construction personnel; the authority of Environmental Inspectors for the Project; and the process for resolving disagreements regarding implementation of environmental mitigation measures.
Views of the NEB	The NEB is concerned that the Environmental Inspector has sufficient authority to initiate the appropriate action to ensure environmental compliance and that construction personnel have sufficient training to implement environmental mitigation measures. The NEB expects that Keystone will fulfill its commitments prior to commencement of construction. The desired end result is to confirm that Keystone has an adequate plan to communicate the EPP, commitments and approval conditions to field construction staff. The NEB is of the view that, should Keystone provide an adequate training and communication plan, the company would be able to ensure appropriate environmental protection.
Evaluation of Significance	Frequency: Medium Duration: Short term Reversibility: Reversible Geographical Extent: PDA Magnitude: Medium Adverse Effect Not likely to cause significant adverse environmental effects.

Refer to Table 5 for definitions of the Evaluation of Significance Criteria

6.2.2.7 Heritage and Palaeontological Resources

Background/Issues	Keystone conducted an assessment of heritage and palaeontological resources as it was identified that artifacts, cultural remains and contexts would be modified or lost as a result of the proposed Project. A baseline review of the local and regional databases was completed in each province. This information was then supplemented by doing a Project specific Heritage Resources Impact Assessment (HRIA) for the Alberta and Manitoba portions of the Project and the proposed new development locations in Saskatchewan. As required, reports were forwarded to the appropriate provincial authority responsible for Heritage and Palaeontological resources for clearance to proceed with the Project.
Mitigation Measures	If historical or paleontological features not previously identified are found on the RoW or facility site during construction, activity in the area would be halted until the Environmental Inspector and cultural/paleontological specialists have been notified. Work would not resume until the appropriate provincial cultural and historical resources divisions has been informed and appropriate actions were taken. Where required by provincial authorities, further field studies to determine detailed

	mitigation requirements will be completed in spring 2007. Clearance to proceed from provincial authorities in Saskatchewan and Manitoba would be required prior to construction. Regarding heritage resources in Alberta, clearance for the Project to proceed was received under the Alberta *Historical Resources Act* under the following conditions: ▪ avoidance or further study for the potentially impacted historic resources sites ▪ deep testing program in areas of high archaeological potential to contain deeply buried cultural material ▪ construction monitoring program during pipeline trenching in areas that contain significant sedimentation and potentially deeply buried cultural material and at entry and exit holes at directional drill locations ▪ restriction of construction activities to the RoW ▪ changes to development footprint would require further clearance ▪ reporting of any additional archaeological resources palaeontological resource or historic sites which may be encountered during construction and/reclamation activities Regarding palaeontological resources in Alberta, clearance for the Project to proceed was received under the Alberta *Historical Resources Act* on condition that a construction monitoring program is in place and a pre-construction inspection is undertaken in three locales: South Saskatchewan River valley crossing, Red Deer River valley crossing, and Sounding Creek where glacial gravels and/or Bearpaw Formation are found. Also, if any bedrock and/or palaeontological resources are encountered during construction, provincial authorities must be contacted.
Monitoring	▪ Keystone committed to monitoring construction activities by a qualified archeologist at sites where subsurface materials may be found. ▪ Specific monitoring may be required by provincial authorities.
Views of the NEB	The Board notes that Keystone has forwarded reports to the provincial authorities responsible for heritage resources in Saskatchewan and Manitoba but that clearance letters have not yet been received. To ensure that any mitigation recommended by these authorities is addressed prior to construction, the NEB recommends the following condition: Condition G – File heritage resources clearance letters from the provincial authorities in Saskatchewan and Manitoba and implement mitigation.
Evaluation of Significance	Frequency: Low Duration: Long Term Reversibility: Irreversible Geographical Extent: PDA Magnitude: Low Adverse Effect Not likely to cause significant adverse environmental effects.

Refer to Table 5 for definitions of the Evaluation of Significance Criteria

6.2.2.8 Lands and Resources for Traditional Purposes

Background/Issues	Based on consultation with Aboriginal groups and considering the location of the Project and nature of the lands impacted, Keystone determined that traditional use studies would be limited in scope. To date, no traditional use activities have been identified that would be impacted by the Project. The Siksika Nation has stated that given the location of the Project, there will be little, if any impacts based upon a map review of the Project area. A work plan has been developed with the Siksika for the purpose of a more in-depth review. The Dakota Nations of Manitoba have indicated since the land in the area of the Project is primarily

	agricultural and privately owned, there should be minimal impacts. Discussions are ongoing to confirm this assumption. At the oral portion of the hearing, Standing Buffalo indicated that since all land is sacred, any construction project is an impact to their traditional beliefs. They indicated that traditional use sites are located along the existing and proposed RoW but the Elders would require some time to identify their location in relation to the pipeline. Keystone has agreed to continue meeting with Standing Buffalo and the Dakota Nations of Manitoba to discuss sacred sites which may be impacted by the Project in their territory. Keystone agreed to share further historical resources studies with Aboriginal communities for their input.
Mitigation Measures	If it is determined through on-going consultation that traditional use sites or activities would be disturbed, Keystone has committed to adjust mitigation plans and file them with the Board in the EPP, prior to construction.
Views of the NEB	The Board notes that the lands required for the Project are previously disturbed, primarily used for agricultural purposes and only a small percentage is Crown land. The Board also notes that Keystone has consulted with Aboriginal groups in the area of the Project and no groups, with the exception of Standing Buffalo, have indicated a concern regarding their ability to carry out any traditional use activities. The Board notes Keystone and Standing Buffalo's commitment to discuss Project impacts and appropriate mitigation. In light of the evidence before it, it appears unlikely the current use of lands and resources for traditional purposes will be impacted by the Project and the Board is satisfied that Keystone has committed to implement and file with the Board in the EPP its mitigation plans to address any impacts to traditional use activities or sites that may arise from ongoing consultation.
Evaluation of Significance	Frequency: Low Duration: Long Term Reversibility: Irreversible Geographical Extent: PDA Magnitude: Low Adverse Effect Not likely to cause significant adverse environmental effects.

Refer to Table 5 for definitions of the Evaluation of Significance Criteria

6.2.2.9 Land and Resource Use

Background/Issues	The Kessler Landowners Group (KLG), located near the proposed Project in Alberta, intervened in the regulatory proceeding. KLG raised concerns regarding various issues including the impact of the Project on their agricultural operations. Further discussion of their intervention is discussed in the Board's Reasons for Decision.
Mitigation Measures	Keystone committed to the following measures to address concerns: ▪ jointly develop and implement a cattle management plan with landowners ▪ based on each landowner's pasture rotation plans and a mutual understanding of the proposed construction schedule, develop measures to ensure ongoing and efficient grazing of lands adjacent to the RoW ▪ reasonable compensation for inconvenience from alteration to grazing activities, loss of grazing lands, loss of crop production and adverse commercial impacts ▪ working with landowners to determine the most efficient way to cross RoW during operation ▪ communicate construction plans and develop mitigation measures to minimize interference with agricultural operations during construction and clean-up operations

Views of the NEB	With respect to the issues raised by the KLG to be considered under the CEA Act, the Board is satisfied that all concerns have been addressed. The Board notes that Keystone has committed to on-going consultation with those impacted by the Project. Should the KLG have concerns with the Project in the future, the Board encourages the KLG to discuss them directly with Keystone.				
Evaluation of Significance	Frequency	Duration	Reversibility	Geographical Extent	Magnitude
	High	Medium Term	Reversible	PDA	Low
	Adverse Effect				
	Not likely to cause significant adverse environmental effects.				

Refer to Table 5 for definitions of the Evaluation of Significance Criteria

6.3 Cumulative Effects Assessment

Background and Methods

Cumulative effects assessment differs from conventional project-specific effects assessment in that it considers larger geographic study areas, longer time frames and other, seemingly unrelated projects or activities. The key difference between determining the significance of project-specific effects and cumulative effects is the influence of other projects and activities. Thus, the incremental cumulative effects of certain projects may be significant when considered with the effects of other projects and activities.

For assessment of cumulative effects, a project inclusion list was developed by Keystone to allow an assessment of effects of the Project in concert with other projects or activities that have been or will be done. Details of cumulative effects for each biophysical and socio-economic resource are discussed in the related sections in the ESA.

Keystone made the following findings in its cumulative effects assessment, presented according to the indicators used in the assessment, which are noted in the following bulleted list:

- *Atmospheric Environment:* Keystone predicts the Project may release CACs and HAPs from the proposed Pipeline Operational Tank Facilities, as well as from publicly known future proposed projects at the Hardisty Terminal. These contaminants may increase the existing concentrations associated with current operations, thereby contributing to cumulative effects on air quality in the surrounding region. Keystone stated that generally, all maximum predicted ground-level concentrations of H_2S, benzene and mercaptans associated with emissions from the model would be well below the referenced regulatory limits.
- *Acoustic Environment:* Keystone predicted the Enbridge Midstream Inc. (Enbridge) expansion of manifolds and booster pumps to be located at the Hardisty Complex are likely to be the largest noise sources. Keystone intends to meet provincial regulatory requirements, and the Enbridge expansion should meet Alberta Energy and Utilities Board - Guide 38 (Guide). This Guide effectively prevents incremental increases in sound levels, particularly at sensitive receptors and minimizes cumulative effects on ambient sound levels. For the pipeline and pump stations to meet the requirements of the Guide, Keystone states the criteria of 40 dB_A at 1.5 km from the facility would be met. The criteria ensure that any newly built receptors in the vicinity of energy developments would not be unduly affected.

- *Soils:* Keystone identified two projects that may overlap with this Project: the proposed Enbridge Alberta Clipper Pipeline and Enbridge's proposed Hardisty tank terminal expansion. Keystone stated the cumulative effects would be limited to the period of construction, and would decrease to background levels shortly afterwards assuming proper implementation of mitigation measures.
- *Vegetation:* Evaluation of residual effects to site specific rare ecological communities requires knowledge of detailed project footprints. Projects considered for inclusion in the Cumulative Effects Assessment (see ESA, Appendix 1A) are largely not at this detailed level of disclosure. As a result, Keystone evaluated local residual effects that were considered to be moderate to high in magnitude and long term to far future in duration. Keystone has predicted a decrease in the area of rare ecological communities as a result of construction. Its prediction is a decrease in area of < 5% in the LSA, and in the RSA (ESA, Table 8-32) resulting in an overall reduction in the area of each rare ecological community potentially effected by the Project. As stated in the Section 6.2.2.1 of this Report, Keystone proposed to mitigate such effects, and the NEB recommends a Native Range Management and Follow-up Program be developed for the construction and operation of the Project.
- *Wildlife:* Keystone submitted that although other projects are planned for the Project area, the only projects with sufficient detail to predict cumulative effects are the proposed development of the powerlines associated with the pump stations. Keystone stated powerlines can pose a threat to raptors known to perch on power poles, and the following powerlines would have a potential effect on wildlife species diversity: PS7-Monitor (6.5 km); PS9-Bindloss (14.4); PS11-Cabri (40 km). Project specific mitigation proposed by Keystone to address these issues includes avian reflectors on shield wires in high potential collision areas (e.g., watercourse crossings, adjacent to wetlands, staging and foraging areas, etc.)
- *Hydrogeology:* Keystone predicted the Enbridge Hardisty Merchant Tank Project (HMTP) to have the potential to interact with the Project and the nearby Battle River. The HMTP would construct 18 crude oil tanks with a total design capacity of 7.5 million barrels. If a spill was not contained at this site, Keystone anticipated that a sub-surface impact would follow the watertable surface towards the regional groundwater discharge area along the Battle River. Keystone concluded that since hydrocarbons float on water this impact would be hydraulically isolated from a similar occurrence at the HMTP on the west side of the Battle River. As a result, Keystone submitted that there would be no cumulative effects on groundwater.
- *Fisheries:* Keystone stated it has determined that upon review of other active or disclosed projects in the RSA, no other projects would be relevant to assessing cumulative effects on fish or habitat productive capacity in the RSAs of the Alberta and Manitoba sections of the Project.
- *Heritage Resources:* Keystone identified that other projects related to oil and gas, road construction, research projects and agricultural activities could result in cumulative effects on heritage resources but that these effects would be minimal. Keystone stated there will be no cumulative effects to palaeontological resources.
- *Lands and Resources for Traditional Purposes:* Keystone identified there no residual effects to lands and resources for traditional purposes by Aboriginal people.

The cumulative effects associated with the construction of the pump stations were considered by Keystone. Given the small magnitude and extent of the residual effects associated with

construction of the proposed pump stations, Keystone concluded that the construction of the proposed pump stations would not add significantly in a cumulative manner to the effects of existing or likely projects and activities.

Views of the Board

The NEB is of the view that the cumulative effects assessment presented by Keystone for the proposed Project fulfills the requirements outlined in the *Scope of the Factors, Keystone Pipeline* (15 March 2007).

The Board notes Keystone has committed to meeting regional, provincial and other relevant standards, guidelines and requirements. In addition, the company has proposed Project-specific mitigation that would minimize potential inter-project interactions.

The NEB is of the view that, taking into consideration Keystone's proposed Project-specific mitigation measures and the conditions that the NEB would impose should the proposed Project be approved, the proposed Project in combination with other projects or activities that have been or will be carried out, would not likely result in significant cumulative environmental effects.

6.4 Follow-Up Program

The NEB considers a follow-up program to be necessary to address potential environmental effects as specified in the tables within Section 6.2.2 of the environmental screening report.

6.5 Recommendations

The following are recommended conditions that may form part of a regulatory decision on the proposed Project under the NEB Act.

Definition for the Commencement of Construction means: clearing of vegetation, ground-breaking and other forms of right-of-way preparation that may have an impact on the environment, but does not include activities associated with normal surveying operations.

A. Keystone shall implement or cause to be implemented all of the policies, practices, programs, mitigation measures, recommendations and procedures for the protection of the environment included in or referred to in its application or as otherwise agreed to during questioning in the OH-1-2006 proceeding or in its related submissions.

B. Keystone shall maintain at its construction office(s):

a) an updated Keystone Environmental Tracking Commitments List listing all regulatory commitments, including but not limited to all commitments resulting from:

   i. the NEB application and subsequent filings;

   ii. undertakings made during the OH-1-2007 proceeding; and

   iii. conditions from permits authorizations and approvals.

b) copies of any permits approvals or authorizations for the applied-for facilities issued by federal, provincial or other permitting agencies, which include environmental conditions or site-specific mitigative or monitoring measures; and

c) any subsequent variances to any permits, approvals or authorizations.

Prior to the Commencement of Construction

C. Keystone shall file with the Board for approval, at least 60 days prior to the commencement of construction, an updated, Project-specific Environmental Protection Plan (EPP). The EPP shall be a comprehensive compilation of all environmental protection procedures, mitigation measures, fish and wildlife restricted activity periods and monitoring commitments, as set out in Keystone's application for the Project, subsequent filings or as otherwise agreed to during questioning in the OH-1-2007 proceeding or in its related submissions. The EPP shall also include the results of additional studies conducted in 2007, updated Environmental Alignment Sheets and Watercourse Data Sheets. Construction shall not commence until Keystone has received approval of its EPP.

D. Keystone shall file with the Board, at least 120 days prior to submission of its first leave to open application, an Emergency Procedures Manual for the Project facilities which will include a table with: valve chainage and GPS locations; leak and rupture information; and environmental features. Keystone shall notify the Board of any modifications to the Manual as they occur. In preparing its Emergency Procedures Manual, Keystone shall refer to the Board's *Onshore Pipeline Regulations, 1999* and the corresponding Guidance Notes.

E. Keystone shall file with the Board for approval, at least 45 days prior to construction, a Native Range Management Plan that includes a Follow-up Program for the protection and reclamation of native range. It shall include:

a) on a map or Environmental Alignment Sheets, the locations where native range management and follow-up would be applied;

b) the measures to be applied, and an assessment of the anticipated effectiveness of the proposed mitigation and reclamation strategy;

c) the schedule for implementing the measures as set out in the above;

d) evidence demonstrating that Environment Canada, Canadian Wildlife Service and Alberta Sustainable Resource Development have reviewed and commented on the Programs;

e) the results, evaluation and recommendations for managing native range;

f) the schedule Keystone shall implement to address any unresolved concerns; and

g) a schedule for filing follow-up reports for native range management reports with the Board.

F. Keystone shall file with the Board, at least 14 days prior to the commencement of construction of the approved facilities, a detailed construction schedule or schedules identifying major construction activities and shall notify the Board of any modifications to the schedule or schedules as they occur. Keystone shall file construction progress reports on a monthly basis until completion. The reports shall include an updated construction schedule identifying major construction activities, information on activities carried out during the reporting period, any environmental and safety issues and non-compliances, and measures undertaken for the resolution of each issue and non-compliance.

G. Keystone shall file with the Board, at least 30 days prior to construction:

a) the comments and recommendations received from the provincial authorities in Saskatchewan and Manitoba regarding the Heritage Resources Impact Assessment; and

b) for approval, the mitigation measures Keystone proposes to address the comments and recommendations in (a).

H. Keystone shall file any watercourse compensation plan required by Fisheries and Oceans Canada for the Project with the Board, at least 14 days prior to the planned start of excavation at watercourses identified in the plan.

I. Keystone shall file with the Board prior to construction, evidence to confirm that Environment Canada, Canadian Wildlife Service and Alberta Sustainable Resource Development have reviewed and commented on the proposed methods for mitigating the effects of construction and operation of the pipeline on *Species at Risk Act* listed amphibian species

J. Keystone shall file with the Board prior to construction, confirmation that Environment Canada, Canadian Wildlife Service (for federal lands), and Alberta Sustainable Resource Development (for Crown lands crossed in Alberta), have reviewed and accepted the proposed seed mixes to be used for the reclamation of the Project, and confirmation that these seed mixes have been obtained.

During Construction

K. In the event of clearing within restricted activity periods for migratory birds, Keystone shall retain a qualified avian biologist to carry out a survey to identify any migratory birds and nests. The spatial boundaries of the survey will include at least 30 m beyond the disturbance footprint for migratory birds and 100 m beyond the disturbance footprint for raptors, of the Project. Keystone shall file with the Board:

a) evidence to confirm that Environment Canada and Canadian Wildlife Service have reviewed and commented on the proposed methods for the survey;

b) the results of the survey;

c) mitigation, including monitoring, developed in consultation with Environment Canada and Canadian Wildlife Service to protect any identified migratory birds or their nests; and

d) mitigation, including monitoring, developed in consultation with Environment Canada and Canadian Wildlife Service to protect any identified migratory *Species at Risk Act* birds or their nests.

L. Keystone shall notify the Board 14 days prior to the commencement of excavation of any watercourse crossing that has been assessed for fish and fish habitat.

M. Keystone shall preserve the riparian vegetation during construction and operation of the pipeline for each of the watercourses listed by KP and name: Boyne River 1174.25, 1174.35, 1174.39; Shannon Creek 1201.25; Deadhorse Creek 1205.1; Unnamed 1217.4; Unnamed 1219.73; and Buffalo Creek 1232.86.

N. Keystone shall file with the Board, at least 14 days prior to horizontal directional drill (HDD) activities at the Red Deer River, South Saskatchewan River and Boyne River and any additional locations where HDD may take place, a drill execution plan specific to each crossing. Guidance for execution plans can be found in CAPP Publication, "Planning Horizontal Directional Drilling for Pipeline Construction". The execution plans shall consider the following:

a) use of drill bit detecting and tracking equipment to confirm the drill path;

b) workspace requirements for equipment at entry and exit points;

c) workspace requirements to construct and layout the pipe drag section;

d) drilling mud and water requirements;

e) environmental protection and monitoring plan;

f) drilling fluid management plans;

g) spill or fluid loss contingency, response, cleanup and mitigation plans;

h) equipment specifications, condition, and integrity; and

i) mitigation of potential detrimental effects of geological formations.

O. Keystone shall:

a) notify the Board in writing of any change from the proposed HDD watercourse crossing methods including those undertaken to comply with CSA Z662-07, and the reasons for that change prior to implementation;

b) provide copies of all correspondence from regulatory authorities relating to the changed crossing method; and

c) file for approval, within 30 days of implementing the changed watercourse crossing method, a description of amended reclamation and re-vegetation measures for the affected watercourse crossings.

P. Keystone shall file with the Board, at least 30 days prior to pressure testing, an emergency response plan for pressure testing activities, including response to a pressure test failure, for each of the following:

a) New pipeline segments;

b) Pump stations; and

c) Tanks.

Post Construction

Q. Keystone shall file with the Board, 6 months after the commencement of operation, and on or before the 31st January for each of the subsequent 5 years, a post-construction environmental monitoring report that:

a) provides a summary of the effectiveness of the environmental mitigation measures applied during construction;

b) identifies deviations from plans and alternate mitigation applied as approved by the Board;

c) identifies locations on a map or diagram where corrective action was taken during construction and the current status of corrective actions;

d) provides proposed measures and the schedule Keystone shall implement to address any unresolved concerns; and

e) evaluates the success of:

i. re-vegetation as measured against a 85% survival rate of recommended plantings;

ii. non-native plant vegetation management.

R. Keystone shall file with the Board for approval, at least 30 days prior to the planned start of operation, a project specific Environmental Protection Program for the operation and maintenance of the pipeline pursuant to section 48 of the *Onshore Pipeline Regulations, 1999*. The Program shall include practices and procedures for:

a) ongoing environmental training for employees;

b) the handling and disposal of all wastes associated with the operation and maintenance of the pipeline;

c) vegetation management;

d) erosion control on the right-of-way;

e) the management of air and noise emissions;

f) soil conservation;

g) travel on the right-of-way; and

h) environmental monitoring and surveillance of the right-of-way.

S. Keystone shall file with the Board, at least 30 days prior to the commencement of operations, Keystone's Project-specific internal standards and practices for the protection of the environment referenced in its application and related submissions in the OH-1-2007 proceeding.

7.0 THE NEB'S CONCLUSION

The Board has determined, pursuant to the CEA Act, that, if the Project is approved and taking into account the implementation of Keystone's proposed mitigation measures, compliance with the Board's regulatory requirements and the recommended conditions attached to the ESR, the construction and operation of the pipeline and associated facilities is not likely to cause significant adverse environmental effects.

This Environmental Screening Report was approved by the NEB on 6 September 2007.

8.0 NEB CONTACT

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